New Community Design to the Rescue

Fulfilling Another American Dream

By Joel S. Hirschhorn and Paul Souza

Since their initial meeting in 1908 to discuss interstate water problems, the governors have worked through the National Governors Association to deal collectively with issues of public policy and governance. The association's ongoing mission is to support the work of the governors by providing a bipartisan forum to help shape and implement national policy and to solve state problems.

The members of the National Governors Association (NGA) are the governors of the fifty states, the territories of American Samoa, Guam, and the Virgin Islands, and the commonwealths of the Northern Mariana Islands and Puerto Rico. The association has a nine-member Executive Committee and three standing committees—on Economic Development and Commerce, Human Resources, and Natural Resources. Through NGA's committees, the governors examine and develop policy and address key state and national issues. Special task forces often are created to focus gubernatorial attention on federal legislation or on state-level issues.

The association works closely with the administration and Congress on state-federal policy issues through its offices in the Hall of the States in Washington, D.C. The association serves as a vehicle for sharing knowledge of innovative programs among the states and provides technical assistance and consultant services to Governors on a wide range of management and policy issues.

The Center for Best Practices is a vehicle for sharing knowledge about innovative state activities, exploring the impact of federal initiatives on state government, and providing technical assistance to states. The center works in a number of policy fields, including agriculture and rural development, economic development, education, energy and environment, health, social services, technology, trade, transportation, and workforce development.

ISBN 1-55877-348-7

The responsibility for the accuracy of the analysis and for the judgments expressed lies with the authors; this document does not constitute policy positions of the National Governors Association or individual governors.

For more information on other publications by the NGA Center for Best Practices, visit the Center's Web site at www.nga.org/Center.

TABLE OF CONTENTS

Acknowledgements

The authors thank the David and Lucile Packard Foundation, the Turner Foundation, the Henry M. Jackson Foundation, the Fannie Mae Foundation, the U.S. Department of Housing and Urban Development, and the U.S. Environmental Protection Agency for funding the work on growth management of the Natural Resources Policy Studies Division of the NGA Center for Best Practices and the preparation of this report. Also, we appreciate the editing assistance of Sue West and Kathy Skidmore-Williams, the research assistance of Melinda Clarke and Casey Johnson, and the administrative support of Telita Campbell.

Executive Summary

New Community Design (NCD) offers a distinct alternative to the developmental "sprawl" that has dominated real estate growth over the last 50 years. NCD principles can be used to create vibrant neighborhoods of housing, parks, and schools within walking distance of shops, civic services, jobs, and transit—in short, a modern version of the traditional American town of times past. By many accounts, these are the types of neighborhoods many Americans want, but few are offered. Key features of NCD include extensive mixed land use, reduced land consumption, community centers, ample green space, transportation options, and building designs that reflect the local culture and harmonize with the natural environment. NCD projects also can help improve public health, preserve open space, and enhance environmental quality.

NCD is a powerful antidote to sprawl and a powerful tool for addressing many current growth problems. Moreover, by enhancing quality of life and place, NCD also becomes a strong contributor to overall economic development. More and more, businesses and talented labor are choosing to locate in areas where quality housing is available and affordable, traffic congestion is minimal, and attractive communities offer a range of recreational and social options.

NCD does not appeal to everyone, though about a third of home seekers would prefer to live in NCD communities if they were available (according to national surveys). However, few people have this choice. The level of NCD construction in recent years is but a fraction—less than 1 percent—of total housing construction. The problem is not insufficient consumer demand but, rather, extremely little supply. As traffic congestion and other impacts of suburban living affect more people, interest in NCD will surely expand. Those millions of Americans need more choice in the market.

Unfortunately, the current real estate development market has been biased toward sprawl.

- Zoning laws encourage sprawl and other single land-use development, and they block mixed land-use schemes that lie at the heart of NCD.
- Though new sprawl development requires costly public infrastructure (including roads, schools, sewers, and water connections), most of these costs are passed through the broader tax base of the locality, providing little incentive to build in older areas with existing infrastructure.
- Building codes favor new construction over rehabilitation and reuse of older buildings.

NCD can be a successful alternative to sprawl, but it needs leadership at both the public and private levels to succeed. Innovative developers and homebuilders are discovering profitable NCD opportunities, but perseverance and vision are required to get such projects off the ground. Likewise, NCD tests the willingness of governments to approve projects that often involve changes to standard zoning and that challenge the traditional "templates" of community design. Finally, the financial community also must look beyond short-term profits to more innovative ways of satisfying consumer demand. The evidence is in, however, that enough Americans prefer NCD communities to make them a market success. By leveling the regulatory playing field and supporting NCD, states and local governments can serve their financial and economic growth interests and help maximize consumer choice in the marketplace.

Policy Options

NCD addresses all growth problems being encountered in states. It gives governors the opportunity to focus on their high priority programs, such as urban revitalization, open space preservation, farmland preservation, maintenance of historic neighborhoods, infrastructure investment and improvement, and protection of natural habitats for wildlife and recreational opportunities. Governors can use five approaches to make the market work more fairly and effectively.

Develop Public Support

Governors can help the public understand the full range of NCD benefits, including more housing choices for people. Specific actions can include:

- reaching more citizens for input on discussions about growth and its impacts on quality of life through publishing survey forms in newspapers and on Internet sites;
- creating design centers where citizens can see alternative community designs and interact with new digital visualization technology tools to express their preferences; and
- using visual preference surveys at public meetings for community-based planning and design.

By using the checklist in this report (see Chapter 4, "A Checklist for Evaluating Projects"), governors can identify outstanding performance and reward it. This public recognition can help bridge the gap between NCD demand and supply. Using the NGA checklist to assess projects, and recognizing that the most worthy projects warrant news coverage to stimulate public recognition and interest, governors could give awards to outstanding projects by developers or builders. This would help stimulate developers to increase supply to meet public demand for NCD, and also help make NCD projects more attractive to lenders and investors.

Assist Local Governments

Most local governments now use zoning codes that support housing subdivisions and other single-use development rather than NCD. States can help local governments adopt codes that support NCD development, leveling the regulatory playing field. Several states, including Maryland, Minnesota, Oregon, Rhode Island, and Utah, have developed model codes for local governments to consider using or adapting. States can also provide financial and technical assistance to local governments for modernizing their codes and for working with neighboring local governments to coordinate their planning and zoning actions.

States can also help local governments support NCD through investments in transportation, water resources, and other public services, which often are best viewed from a regional perspective. NCD makes those investments more cost-effective. Public transit is one facet of NCD that is particularly important. Infill NCD projects in urban areas and older suburbs can increase the use of public transit and reduce traffic congestion, which are plaguing communities nationwide. Integrating local support for NCD with state transportation planning and spending offers many benefits.

Reduce Government Support for Sprawl Development

States can also level the playing field by reducing spending that now supports land-intensive greenfields development and its high infrastructure costs. States can target spending in designated growth areas. In addition, states and communities can make greater use of impact fees for recovering the true costs of providing infrastructure and public services to developments. The idea is straightforward. Development farther away from existing infrastructure will pay higher costs to receive a full complement of roads, schools, water and sewer service, and other public services, rather than burdening the broader tax base. Reducing

subsidies for sprawl development levels the playing field, because NCD offers lower infrastructure costs on a per capita or per dwelling basis. Some states have not enacted laws that give local governments the ability to use impact fees, but in the 39 states that have such laws, state agencies can work with the public, business, and local governments to use impact fees more effectively and equitably.

Address the Financing Barrier

Money matters. Governors and their appropriate cabinet members could work with leaders of financial institutions, developers and builders, business associations, community organizations, and nonprofits with considerable experience in community development to develop more effective public-private partnerships that promote and finance NCD projects. Recognizing the difficulty in financing NCDs, governors could recommend that state pension funds consider financing such projects, particularly when they are consistent with revitalization of older urban or suburban communities.

Coordinate State Support for NCD

Governors could direct state agencies to support NCD projects, especially urban and suburban infill projects. Expediting permits, giving state financial assistance for NCD projects from existing brownfields and main-street programs, and targeting capital spending on projects that enhance NCD projects or locations for them can do this. State agencies could also be directed to work together to develop and disseminate to the public information about NCD attributes and benefits.

Governors could ask their state cabinet, commission, task force, or advisory group handling growth-management and land-use issues to examine means for removing state and local government obstacles facing private-sector developers and builders interested in creating NCD projects. Recognizing that some ways to encourage more NCD projects require legislative action, governors could develop bills for consideration by appropriate legislative committees. For example, requiring attention to and encouragement of such projects could refine state land-use planning statutes.

Conclusion

NCD is a powerful way to promote housing availability and a style of growth that enhances quality of life and place. The American dream has often been seen as the desire for quality housing, but increasingly it is also about the desire for community, which NCD emphasizes. However, NCD tests the willingness of governments to look beyond current approaches to zoning, financing, and land use. Innovative developers and builders, as well as real estate investors and lenders, need more equitable opportunities, in terms of government policies and regulations, if they are to profitably pursue NCD projects. More flexible zoning, fair impact fees, and smarter rehabilitation building codes can make markets operate more effectively and equitably and give Americans the choices they want.

I. The Problems with Current Patterns of Development

Governors are implementing creative approaches to address growth and quality-of-life issues. By revitalizing urban areas and older, close-in suburbs, offering transportation alternatives, and protecting open spaces and other environmental amenities, states seek to grow in ways that retain their valuable assets. There is a growing market for alternative development approaches that are consistent with these broad objectives and that address housing needs. However, institutional barriers are limiting these alternatives.

States and local governments have adopted a series of laws, codes, and regulations that discourage alternatives to conventional single-use development. Residential subdivisions, office parks, and strip malls result from regulations that establish limits on the types of structures that can be built on a certain piece of land. There usually is no support for mixed land uses, such as housing above retail stores. Codes should allow mixed-use development *by right*, not through some cumbersome and costly variance process. In addition, real estate investors favor low-density, land-consumptive developments for housing because of lower land costs and a well-understood market, rather than mixed-use projects for which fewer developers and builders have expertise. This well-established industry structure and institutional framework encourage sprawl.

> NGA uses the term New Community Design (NCD) to cover an expanding number of concepts and terms that share many essential features. A simple definition of NCD is what the noted planner and architect Peter Calthorpe described as: "**neighborhoods of housing, parks, and schools within walking distance of shops, civic services, jobs, and transit—a modern version of the traditional town.**"[1]

NGA's Principles of Better Land Use have been used to define evaluation criteria and generate a checklist. While no project is likely to satisfy all the NGA criteria, the checklist is a new tool to determine the extent to which any project is consistent with the NGA principles, which many people also know as "smart growth" principles.

NCD is meant to encompass many characteristics of other concepts, including New Urbanism, Traditional Neighborhood Development, compact development, livable communities, healthy communities, new towns, transit-friendly development, sustainable communities, master-planned communities, and neo-traditional design. While any projects described by such terms may offer benefits over sprawl development, they may not be consistent with NCD and new growth-management strategies. Moreover, some of these design philosophies, particularly New Urbanism, pose specific requirements, compared to others that provide more flexibility and freedom for interpretation by the private sector. Also, none of the many terms has reached widespread acceptance in either the public or private sector.

Another problem is the lack of common understanding of terms being used to describe elements of communities. For example, strip malls are often called "town squares," major six-lane suburban roads without trees are called "parkways," and cookie-cutter suburban subdivisions are called "villages." Catchy words are often used to appeal to consumer preferences for something other than typical suburban subdivisions. The NGA checklist can help the public and others get to the basic characteristics of projects.

"Almost everywhere in the United States laws prohibit building the kinds of places that Americans themselves consider authentic and traditional. Laws prevent the building of places that human beings can feel good in and can afford to live in. Laws forbid us to build places that are worth caring about."

James Howard Kunstler, "Home From Nowhere," *The Atlantic Monthly*, September 1996.

The Problems with Sprawl

After World War II, the widespread availability of automobiles and the newly funded network of interstate highways facilitated a mobility boom. Low-cost housing was built outside the urban edge, allowing people to purchase their own single-family homes. As a result, the suburb was born and people began to separate the different facets of their lives. Connecting them was the automobile. Outlying open spaces, including farmland, were lost, with a host of impacts on the environment and rural communities. In America today, sprawl is the convention. A high percentage of Americans live in sprawl suburbs, and many gladly trade longer commuting times for a piece of the traditional American dream of a good-sized house on a large lot, offering lots of privacy, in a safe suburban community with high-quality schools. For many people, that choice will not change, but that choice is costing all taxpayers considerable money for new infrastructure. In contrast, research indicates that about a third of Americans would choose compact, mixed-use neighborhoods, if they were available, safe, and affordable—and these neighborhoods impose lower infrastructure costs. NCD is also important because it addresses the national need for housing of all types for all income levels.

Sprawl Marches On

Sprawl and Urban Decay

With the birth and expansion of suburbs came a concomitant decrease in the vitality of urban America. In the 1950s, America's cities experienced the urban flight phenomenon. The 1970s were particularly difficult for cities; 36 major industrial cities, including Philadelphia, New York, Chicago, and Detroit, lost population during this decade.[2] People fled to outlying areas to purchase the relatively low-cost new homes offered through suburban development. As a result, investments that would otherwise have been spent in cities were poured into suburban developments that crept outward, consuming more and more land. Sprawl has been a mirror image of urban decay.[3]

Loss of Quality of Life

Several factors contribute to a loss in quality of life.

Traffic Congestion. Growing traffic congestion, even on weekends, is a consistent complaint of citizens. On average, the time spent commuting to work increased 36 percent from 1983 to 1995.[4] Vehicle miles traveled (VMT) increased 68 percent between 1980 and 1997; interstate highway use increased 124 percent, the greatest increase for any road type.

The Texas Transportation Institute considered traffic congestion in 70 urban areas between 1982 and 1996.[5] Only two of the 70 areas experienced decreases in congestion during this period. The study found that the typical person lost 40 hours to traffic congestion in 1996, worth about $74 billion in lost productivity and fuel efficiency.

Time spent in traffic is generally greater for people who live in outlying suburban areas. According to a study by the U.S. Department of Housing and Urban Development, "the average suburban household drives 3,300 more miles than its central city counterpart—about 31 percent more annually. That additional driving amounts to an additional $753 per year per household in transportation costs. Assuming an average driving speed of 30 miles per hour, suburban residents spend 110 hours more behind the wheel each year than their urban counterparts—almost 3 full weeks of work."[6]

Loss of Open Space. In recent years, sprawl has consumed a significant amount of open space. According to a recent study, rural land equal in size to Maine and New Hampshire was converted to suburban development between 1972 and 1997.[7] The same study found that about 2.2 million rural acres were lost every year in the 1990s. If this rate continues, another 110 million acres will be lost by 2050, or roughly the combined size of Connecticut, Delaware, Massachusetts, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia. Another study found that from 1982 to 1997 national urbanized land area increased by 47 percent—25 million more acres—while population increased by only 17 percent. Only 6 percent of 281 metropolitan areas became denser.[8] Although the development may have provided much-needed housing and an integral spark in the economy, citizens often view the loss of open space, in retrospect, as an inequitable exchange.

Environmental Impacts. Sprawl fragments natural habitats, causing the decline of species. The National Wildlife Federation found in a recent study of southern California wildlife that "sprawl—low density, automobile-dependent development into the natural areas outside of cities and towns—is the leading cause of species imperilment in the state. Outranking all other factors, sprawl imperils 188 of the 286 California species listed as threatened or endangered under the federal Endangered Species Act, or 66 percent of the state's listed species."[9] Throughout the country, loss of habitat is a leading cause of biodiversity decline.

Sprawl consumes wetlands and pollutes water supplies. Wetlands are natural filters, assimilating nutrients and toxic runoff before they enter the water column. The National Wetlands Inventory, conducted every 10 years by the U.S. Fish and Wildlife Service, found that 644,000 acres of wetlands were lost between 1986 and 1997; 30 percent of the wetland loss, the single largest contribution, was attributed to new development.[10] This development on the fringe of urban areas is a double-edged sword: new pavement increases pollutant runoff into water bodies at the same time the natural cleaning systems in the watershed are lost.

Sprawl contributes to air pollution. Cars contribute to four of the six principal pollutants defined in the Clean Air Act: ground-level ozone, particulate matter, carbon monoxide, and nitrogen dioxide. Significant strides have been made to reduce these principal pollutants by applying new technologies to cars and industrial point sources. However, a portion of the gains reached by improved technologies has been offset by increases in driving. From 1970 to 1999, the total vehicle miles traveled in the country increased by 140 percent.[11]

Threats to Economic Growth and Government Budgets

It has become well recognized that high quality of life and place are increasingly needed to attract and retain New Economy companies and knowledge workers. Companies go where workers want to be. With sprawl development, an area can lose its appeal to workers and companies because various important amenities are lost.

State and local governments have limited resources for infrastructure, and sprawl is more costly for government. There are also harder-to-quantify external costs in the form of environmental degradation. A critical question related to this cost differential is who pays? Impact fees charged for development rarely cover the higher capital, maintenance, and environmental costs associated with a new community. In fact, most rapidly growing regions experience tax increases to cover newly required public services.

Research at Florida State University found the actual cost in Tallahassee for connecting homes to sewer facilities is $4,447 for inner-city homes and $11,443 for upscale homes at the northern edge of town.[12] Yet, all Tallahassee households are charged about $6,000 for sewer connections. The urban core of the city is subsidizing suburban residents. This fiscal reality, found across the country, encourages sprawl. By charging development on the fringe less than actual costs, and perhaps no costs, local governments encourage low-density, land-consumptive development at the expense of taxpayers already living in the jurisdiction. This often leads to rural gentrification as sprawl spreads into the countryside. At least 39 states have enacted legislation enabling impact fees, although local jurisdictions may not choose to use the tool.[13]

The Supply and Demand Conundrum

Considering NCD from a market perspective has revealed something important for policymakers. When given a choice, many Americans will choose to live in NCDs, whether they are located in urban or suburban areas. Evidence for this includes the higher prices consumers are paying for greenfields NCD communities over comparable, nearby conventional subdivisions; high housing costs in revitalized urban areas; and market research on what consumers want. However, few people have this choice. The level of NCD construction in recent years is a miniscule fraction of total housing construction—less than 1 percent. The problem is not insufficient consumer demand but, rather, extremely limited supply. This is despite the great success of innovative developers and homebuilders of NCD. Analyses of NCD point to a market demand of about one-third of homebuyers, and many believe this percentage is higher. Demand will increase as NCD projects become more familiar, as public discontent over traffic congestion increases, and as public officials provide more support for NCD.

Three factors limit NCD from supply and market share. The first is local zoning codes, which make it easy for sprawl developments and other single-use projects, such as strip malls and office parks, and very difficult for mixed-use communities to get zoning approval. Specific requirements for housing can block design characteristics of NCD, such as smaller lots, higher dwelling densities, and narrower streets that are connected in a grid to promote through traffic and walking throughout the community. Current codes or ordinances are out of synch with

market demand. Designers and developers seeking to build NCD projects must usually acquire numerous variances from local governments, significantly increasing costs.

The second factor is financing. Many financial institutions tend to favor single-use residential projects, strip malls, and suburban office parks because of their lack of complexity and familiarity. Contrarily, mixed-use NCDs are perceived to have more risk. This causes conventional real estate analyses to discount the long-term returns of NCDs, making them difficult to finance.

Another factor is that conventional project developers and production builders generally have expertise in single-use projects and, naturally, tend to keep doing what has already worked for them. Many are also not prepared, or able, to handle the higher up-front costs of the more intensive planning and design activities for NCD projects.

Consumer Preferences

"In our survey, we were surprised at the extent to which buyers were sensitive to sprawl. Buyers are beginning to recognize that sprawl has a direct and strong relationship to quality of life issues as well. This new sense of 'livability' will only get stronger in buyers' minds… We have found that community is just as important in a buyer's mind as the floorplan, size, and style of the home they choose. With the scant amount of free time most people have these days, any opportunity they can get to increase their quality of life and make everyday life more convenient is greatly appreciated. If a community is designed to provide that, then that might be a profound competitive advantage."

American LIVES, *Community Preferences: What the Buyers Really Want in Design, Features and Amenities* (Oakland, Calif.: American LIVES, 1999).

About This Report

The purpose of this report is not to attack dominant home choices and land uses, but to provide a full and accurate account of an alternative "American dream" that emphasizes community as well as housing, and how that dream can be fulfilled by states playing a role in removing obstacles government has created. The next part of this report presents information to clarify what NCD is and how it differs from conventional low-density, single-use development; it includes many examples of NCD projects nationwide. Following that, specific information on the benefits of NCD is provided. Then, the NGA checklist for evaluating NCD projects is presented, together with different ways of using it and an example of applying the checklist to an actual project. Following that is a section on the market for NCD, including demand, incentives, and barriers. Finally, policy options for governors and states are presented. The Appendix provides detailed analysis of the NGA Principles for Better Land Use to support the development of the NGA checklist for evaluating projects and communities.

2. Understanding New Community Design

NCD is best viewed in qualitative terms. The measures that define NCD provide considerable flexibility to developers, builders, and consumers, rather than quantitative and prescriptive requirements. Nevertheless, local communities typically develop more specific requirements based on their own preferences, circumstances, and needs. State and local governments often provide zoning requirements to define the most fundamental facets of NCD. Several definitions of NCD are given below, followed by discussions of four fundamental dimensions of NCD: mixed uses, preserving land and maximizing usable green space, transportation choices, and a range of housing opportunities. In each discussion, examples are provided from state and local laws or ordinances to illustrate various approaches being used to implement NCD. A fuller presentation of NCD features and characteristics is available in the Appendix, where the NGA Principles for Better Land Use are used to develop a range of evaluation criteria. In the last part of this section, examples of NCD projects are given.

NCD Definitions

While there is no commonly accepted definition of NCD or the many other terms being used, here are some important statements from various governments. They illustrate common concepts, but also some significant variations.

The Wisconsin Model Ordinance for Traditional Neighborhood Development says:

> The "smart growth" law defines "traditional neighborhood development" to mean: "compact, mixed use neighborhood where residential, commercial and civic buildings are within close proximity to each other." It is a planning concept that is based on traditional small town and city neighborhood development principles. Traditional neighborhood development is, in part, a reaction to the often-inefficient use of land and infrastructure and lack of a sense of community in many newer developments.

The Maryland Smart Neighborhoods Models and Guidance document states:

> Smart neighborhoods are relatively self-contained communities with a compact mix of residential, commercial, employment/office, and civic land uses and range of housing choices, with a design that fosters pedestrian and bicycle activity, public safety, environmental protection, long-term investment, efficient use of infrastructure, and efficient provision of public services.

Knoxville, Tennessee, uses this description:

> This district is established to foster the development of comprehensively planned, pedestrian-oriented neighborhoods. This is to be accomplished by promoting a variety of land uses, housing types and density, and by requiring skillful architectural and landscape design in creating buildings and open spaces. This district is also created to avoid the negative impacts of suburban sprawl by minimizing infrastructure costs, traffic congestion, and environmental degradation.

Figure 1, (next page), illustrates through digital enhancement how a typical low-density, commercial, single-use area can be transformed into a high-density, mixed-use, and walkable NCD neighborhood. The first image is the Denver location as it is. (photos by Urban Advantage.)

Figure 1.

Figure 2, (below), illustrates the difference between an NCD residential street and what is found in a typical suburban sprawl place.

Top: Example of a street in a walkable NCD neighborhood, Newpoint in Beaufort, South Carolina. Note sidewalk, closeness of houses to street, front porches, retention of existing trees, and absence of garages on street. *Bottom*: Example of a typical automobile-dependent sprawl development with only single-family houses. Note absence of sidewalk, large front lawns, and garages facing wide street. (photos by Jason Miller/TNDhomes.com.)

Mixed Uses

A fundamental goal of NCD is to get a full array of different types of land uses and structures to work together to create a vibrant community. The minimum array includes housing, office space with significant employment opportunities, schools, retail shopping, outdoor recreation areas, and some combination of civic and public spaces and buildings. *The critical characteristic of true mixed-use communities is that residents provide a market and employees for businesses, and, in turn, businesses provide desired amenities and employment opportunities for residents.* How much of each category is desired? There are no set rules or standards. But lessons can be learned from past efforts.

NCD projects include offices. The issue is whether there is sufficient office space to create some type of employment center. With only a few offices, the need remains for a significant number of residents to commute by car to jobs some distance away. *Successful greenfields NCD projects often try to get the number of jobs to be a relatively high fraction of the number of residents, say perhaps 20 percent to 40 percent*, and some planners recommend that numbers of residents and jobs be comparable.

Similarly, without significant retail shopping, the goal of reducing the dependence on car transport to remote shopping is lost. For example, just having a restaurant in a good-sized community would not satisfy the spirit of the mixed-use dimension of NCD. What are needed are full-service food stores, drug stores, hardware stores, and similar places that fulfill most everyday shopping needs of residents and that can also benefit from people working in local offices but who may not live in the community. Likewise, many types of civic buildings are needed, such as a library and a community center with meeting facilities.

The other important characteristic of NCD is that all these varied land uses and building types should be very convenient to residential areas within the community so that cars are not necessary. *A common design objective of NCD is that no resident has to walk more than 10 minutes to 15 minutes to reach key amenities within the community*. Infill projects can often fulfill some mixed uses because of amenities in the nearby areas.

In its model for consideration by local governments, Maryland intends to use this standard for mix of uses and land-use allocations:

> "The smart neighborhood development shall include a mix of commercial, office/employment, civic and residential uses, and shall mix commercial, office/employment, and residential uses within buildings and blocks."

The Envision Utah model code presents this view of mixed-use centers:

> The hierarchy of Centers set forth in Envision Utah's Quality Growth Strategy (QGS) includes Neighborhood Centers, Village Centers, and Town Centers. To be walkable, these Mixed-Use Centers must integrate retail services, community amenities and housing opportunities. The mix and extent of these uses varies depending on the size of a Center's market area, its regional and local accessibility, the availability of land, surrounding uses, and other location advantages.
>
> **Neighborhood Centers** are the smallest mixed-use unit, and provide local conveniences and destinations for the residential areas that immediately surround them. In Neighborhood Centers, neighborhood-focused retail and/or civic activities permit

residents to walk for many trips. Moderate-density housing takes advantage of the close proximity of these conveniences. **Village Centers** serve larger residential areas that may contain several Walkable Neighborhoods and Neighborhood Centers—sufficient to support a full-service grocery store and associated shops…Village Centers also contain professional offices and residential development at moderate densities. **Town Centers** are commercial and civic focal points for a large community of neighborhoods and districts. Town Centers draw together common community destinations, such as shopping, entertainment, working, government, and cultural events. Residential uses accompany these uses to capitalize on their proximity. To succeed as walkable districts, Town Centers must be built at intensities that permit rich synergies among uses and support transit service.

Preserving Land and Maximizing Usable Green Space

Compact design and efficient use of land is a key feature of NCD. This means a higher density of housing units per residential acre of land. *Low-density suburban subdivisions typically have densities in the range of one-fourth unit per acre to two units per acre. NCD places typically are designed to achieve densities of more than 10 units per acre and often go much higher, in the range of 20 units to 40 units per acre,* especially for infill projects in urban areas or older suburbs, which may have more multifamily units.

Design Trumps Density

The word "density" evokes negative images and is often poorly received by the public. Packing more people in more homes on a smaller land area conjures anxieties. People fear their investment will suffer, or they imagine unpleasant, crowded living conditions with noise problems and a loss of visual privacy. However, when shown both high-density and low-density development pictures, people feel differently. Design determines how people feel about a place. High-quality design conquers qualms about higher density. In the best NCDs, density varies because of a mix of housing styles and types, and these variations give homebuyers or renters choices. Many people are willing to trade large backyards in suburbia for public green spaces and other neighborhood amenities, as long as their housing satisfies their needs.

Across the country, local governments and developers are using digital technologies, computer-generated modification of images of local places, GIS data systems, and processes such as the Visual Preference Survey and Community Vision Survey.[14] These help people see and understand design alternatives, such as those illustrated in Figures 1 and 2. Responses throughout the country are remarkably similar: people want NCD, places where they can walk safely to local stores and enjoy nearby parks. Preferred designs and places are almost always higher in density than sprawl developments. People usually give low scores to conventional sprawl developments and single-use projects, such as big-box stores with large parking lots and strip malls, and high scores to old-fashioned, mixed-use neighborhoods. The survey has become an important tool to build public support for NCD projects and changes in zoning codes.

In a visual survey in Fort Collins, Colorado, 65 percent of respondents agreed that neighborhoods should include a wide variety of housing.[15] In a midtown Atlanta study, 57 percent of survey participants wanted future development in the form of neighborhoods with a mix of residential, commercial, and civic uses within walking distance of each other.

> In its model for consideration by local governments, Maryland intends to use this development standard for density: "The minimum net residential density…shall reflect the density of the surrounding community but in no case be less than 3.5 units/acre." The code suggests 3.5 housing units per acre for small towns in a rural context; seven units for large towns, small cities, and suburbs; 10 units for suburbs with rail transit, 10 units for urban areas; and 20 units for urban areas with rail transit.
>
> The Envision Utah model code specified: "In Residential Neighborhoods, projects shall have an overall density of at least five units per gross acre."

A problem with many conventional codes is that they require relatively large lot sizes. Alternatively, Austin, Texas, which has no minimum interior side yard setback, uses this requirement to support houses being close to each other and the street: "Maximum lot size, single-family duplex: 4,000 s.f. [square feet]."

An essential trade-off is characteristic of NCD. A lot of land around single-family homes in conventional suburban subdivisions is traded in NCD places for many more open, green spaces in the public domain. These public green spaces must be available for all residents to use for multiple purposes, including recreation, exercise, and interactions with neighbors. In the best NCD places, such public green spaces are also dispersed throughout the community so that all residents can easily by walk to them. Usually the goal is have them within about a five-minute walk from homes.

> The Envision Utah model code specifies: "Small parks should be located within two to three blocks of most homes. Streets and building fronts should surround parks to make them active and safe."

How much green space is desired? Again, there are no rigid standards, but *in the best designed communities, the fraction of land retained as public green spaces is often in the 20-percent to 50-percent range for greenfields developments.* For infill projects in urban and suburban areas, the percent of green space may be much smaller, but it is still an essential feature of even the smallest NCD projects. It should also be noted that NCD projects should preserve original green spaces and environmental features of the location so that, to a very large degree, they are incorporated into the community design. Forest areas, streams, and other features should be retained, not lost because of home construction.

> The city of Belmont, North Carolina, has this requirement: "Each neighborhood shall contain as its central focus, at least one square or park no smaller than one acre, and no greater than three acres. This square shall be within 600 feet of the geographic center of the neighborhood."
>
> Monroe County, Florida, requires natural edges to cover 50 percent of the total area within the Traditional Village, and uses this definition: "The natural edge consists of wilderness preserves for wildlife and marine habitats, parks protecting the natural vegetation, greenbelts, hybrid parks, heaths and undisturbed shoreline areas."
>
> Gainesville, Florida, has this landscaping requirement: "In the Traditional City area, landscaping should be used both to soften the 'hardness' of the urban area for the pedestrian and make the pedestrian feel more comfortable by providing shade, reducing

glare and helping to form public space, 'outdoor rooms,' and street corridor edges. Such formality of landscaping adds dignity to the Traditional City area."

In its model for consideration by local governments, Maryland intends to use this development standard for open space: "The smart neighborhood shall incorporate public open space to meet residents' recreational needs, storm water management requirements, and environmental protection goals through a variety of parks, greens, squares, playgrounds, plazas, greenbelts, preserves, and water infiltration areas. The development shall make the maximum use of existing natural systems and features."

Transportation Choices

A fundamental goal of NCD is to give residents choices other than automobile use. This includes, where feasible, access to public transit, particularly in infill locations. It also means walkable street layouts and continuous green spaces for biking and walking trails. NCD also means facilitation of telework through provision of broad-band capabilities in homes. In large greenfields NCD projects, some internal public transit may also be appropriate, such as trams. *The most important NCD concept is that compact, mixed-use design treats pedestrian, bicycle, and automobile travel as equally important.*

True NCD developments can provide a 25-percent to 50-percent reduction in automobile trips and vehicle miles, by making walking and biking fulfill many everyday mobility needs.

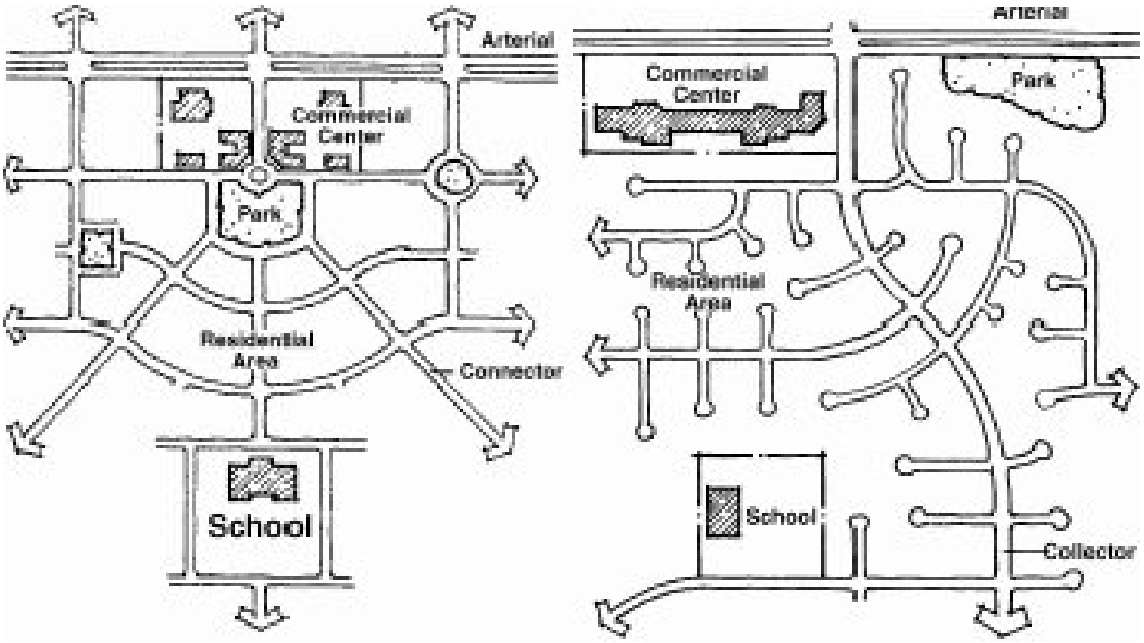
NCD demands that communities be designed to promote walking and biking as fundamental modes of travel from one location to another, as well as for recreation and exercise purposes. There is no compromise on this point. Streets must be well connected to facilitate movement throughout the community, and those streets must have sidewalks, cross-walks, good lighting, and significant shade trees. Streets also tend to be narrower than in conventional communities, to calm traffic and make them safer. Research has shown that narrower streets reduce vehicle accidents and do not significantly reduce fire protection, despite the view by many fire departments that wide streets are needed for large vehicles. Of course, many urban areas and old, smaller towns have narrow streets.

On the important issue of increasing street connectivity, Envision Utah's Urban Tools for Quality Growth says:

> By definition, the highly connected street pattern in a walkable community is composed of smaller block sizes to minimize walking distances between destinations. The scale of residential lots and ownership patterns lends itself to smaller blocks than commercial areas (particularly retail anchor stores with large parking lots). As a rule, the maximum block size for residential uses is three acres (220 feet by 600 feet), while the maximum block size for commercial uses is about four acres to seven acres (500 feet by 600 feet). Note that these block sizes are maximums; smaller block sizes are always possible and are encouraged.

Figure 3, (next page), illustrates design layouts with and without street connectivity.

Figure 3. Demands on the thoroughfare system and large public expenses can be avoided when street connectivity is maximized (left view). Drivers use the residential and connector network for local trips, and there are many ways into the area. Connected street networks also improve emergency response time and are likely to have lower costs for refuse collection and snow removal. Connected street patterns may be in a gridiron, curvilinear, organic, radial, or any other style that provides for internal connections and external linkages. Unconnected streets (right view) increase traffic on the relatively fewer through streets and do not facilitate walking through the community. (Envision Utah[16])



Belmont, North Carolina, uses this requirement to promote walking: "All streets and alleys shall terminate at other streets within the neighborhood and connect to existing and projected through streets outside the development."

Austin, Texas, has this requirement to support a pedestrian-friendly design: "A Neighborhood Center Main Street is a primary commercial/retail street with a Neighborhood Center. A main street is the commercial spine for the TND [Traditional Neighborhood District] and must be designed to encourage pedestrian activity. Adjacent land uses include retail, commercial, and mixed use."

In its model for consideration by local governments, Maryland uses this objective to support multiple transportation options: "The quantity of parking spaces is sufficient to support demand but reflects opportunities for reducing automobile trips due to development design and/or availability of alternative modes of transportation, and opportunities for shared parking."

> Knoxville, Tennessee, includes this provision on parking to reduce paved areas: "In the case of commercial or office uses that have shop fronts adjacent to sidewalks and streets, on-street parking directly in front of the lot shall count toward fulfilling the parking requirement."

Like many places that have adopted NCD-supportive codes, Austin, Texas, uses this requirement to encourage pedestrian activity: "A parking lot must be located to the rear or side of the structure."

> Location and certain design features of homes can support walkable neighborhoods. One issue is that conventional codes often require relatively large and fixed distances between homes and streets, but Belmont, North Carolina's, requirement is: "Buildings on detached home lots shall be set back between 0 feet and 25 feet from the frontage line."

Many conventional codes actually prohibit front porches, which are deemed essential in NCD for safe, walkable streets, as well as for promoting interactions among neighbors. Monroe County, Florida, has this ordinance, which also supports variations among houses on a street: "Stoops, and front porches may encroach up to 10 feet into the front setbacks."

> The Envision Utah model code specifies: "Every primary entry shall be accompanied by a porch or covered area. Entry porches shall have a minimum dimension of at least six feet by 10 feet clear, and may project six feet into any street-facing setback."

A Range of Housing Opportunities

The best NCD places offer a range of housing options, not just single-family, detached homes. Multifamily units of various types are also needed, and not just for purchase but for rental, also. The goal is variation in the look and feel of the community, in contrast to many conventional subdivisions, where all the houses are pretty much the same. NCD professionals work hard at creating a mix of architectural features. Moreover, the issue of affordable housing is critical. A community that caters only to consumers seeking very expensive houses is not consistent with NCD. For example, affordable housing for low- and middle-income people has been shown to be feasible in the 10-percent to 15-percent range. *And in the best NCD places, such affordable housing is dispersed throughout the community and is largely indistinguishable from higher-income housing.* The Vermillion community in North Carolina has made an arrangement with Habitat for Humanity to build houses on donated lots that will be dispersed throughout the community and fit in with design standards, and some 20 percent to 30 percent of its regular housing is affordable.

> Maryland uses these objectives in its model code: "Housing affordable to people with a range of incomes supports economic diversity. A range of housing types serves people with different housing needs and contributes to the vitality of the streetscape. The physical distribution of different housing types throughout the development provides visual interest and ensures the graceful blend of affordable housing into the community."
>
> Maryland's actual development standard for the mix of housing types is: "The smart neighborhood development shall provide a mix of housing types within blocks. The smart neighborhood development shall include [between 5 percent and 15 percent] moderate-income housing, integrated into the design of, and distributed throughout, the community."

Monroe County, Florida, has this requirement in its Traditional Village Ordinance: "A maximum of four consecutive affordable units shall be conglomerated along any block frontage."

Hope VI Success Story—Park DuValle, Louisville, Kentucky

The U.S. Department of Housing and Urban Development's (HUD) Hope VI program is integrating NCD principles with affordable housing. With more than 200 projects across the country, Hope VI is introducing new, mixed uses into cities; placing public housing in economically strong neighborhoods; promoting mixed-income communities; and forging partnerships with other agencies, local governments, nonprofit organizations, and private businesses.

One Hope VI success is the Park DuValle district in Louisville, Kentucky. The project is redeveloping a 130-acre site where 1,100 public housing units once stood. The redeveloped site includes a mixed-income neighborhood of 1,200 new homes, duplexes, and small apartment buildings. The housing density is over 10 units per residential acre. The design stresses a pedestrian-friendly neighborhood with mixed-income homes that are closely integrated with recreation, a town center with retail shopping, and civic spaces. Homes with yards and porches encourage a sense of community and responsibility. There is a well-planned system of sidewalks and interconnected streets. The project has had excellent stakeholder involvement. Park DuValle received an Honor Award in Urban Design from the American Institute of Architects.

The Louisville Community Development Bank and Louisville Real Estate Development Company are part of a coalition that has guided the project since its inception in 1993.[17] In addition to HUD, the coalition includes the City of Louisville, the Housing Partnership Inc., the Park DuValle Neighborhood Advisory Committee, and a number of private lenders and investors. Together, the coalition has leveraged HUD's initial $51-million investment into a $190-million fund, half of which is public money.

Examples of NCD Projects

One way to appreciate different designs and characteristics of NCD projects is to distinguish among the three main locational differences: urban infill, suburban redevelopment, and greenfields projects.

- **Urban infill NCD projects** typically employ effective partnerships among local government, the developer, and community interests. In many cases, urban locations present a more supportive zoning code for NCD, because urban revitalization efforts have seized upon NCD as fitting the needs of cities and peoples' clear interest in living in attractive urban settings.
- **Suburban redevelopment** is a newer phenomenon, emerging as older, inner-ring suburbs have declined because of leapfrog development into rapidly growing outer suburbs or edge cities. Many of these efforts result from a local government's recognition of the potential benefits of making greater use of land that is not being used or that has the potential for much more use. Redevelopment can improve the tax base and attractiveness of the suburb.
- **Greenfields projects** have been the primary focus of NCD developers for a variety of reasons, including the opportunity to design whole communities from scratch. This

contrasts with urban and suburban infill projects that, because of land limitations, are usually on a much smaller scale and must fit in with surrounding neighborhoods. On the other hand, greenfields projects cannot make use of components of adjacent neighborhoods to help fulfill mixed-use needs, such as employment centers and shopping areas. This poses greater challenges for developers in assuring more than just residential land use. There is usually a greater problem of unsupportive zoning codes. Greenfields NCD projects usually result from the initiative of a developer, who must often overcome resistance from local residents, and sometimes from local government, concerned about various impacts of development in rural areas. These NCD projects also compete more directly with conventional sprawl-type subdivisions.

These three applications of NCD are illustrated here with examples from across the country. These examples have been selected mostly on the basis of their consistency with the NGA Principles of Better Land Use, and also to show geographic diversity. Additional examples are provided in the discussions presented in the Appendix. There is a lot of successful NCD activity nationwide. *NCD is not some theoretical concept limited to some very special situations. It has widespread applicability and can satisfy considerable public demand.*

NCD for Urban Infill

NCDs in urban infill sites accommodate growth while protecting open space. Because the projects are located in places where impacts are already apparent, the footprint on the landscape and environmental effects are minimized. Another advantage of using NCD in urban areas is that retail businesses benefit from an existing nearby market, increasing the likelihood that new businesses will thrive soon after construction. The availability of a compatible infrastructure network also makes NCD effective in urban areas. Because many cities were developed before sprawl became the norm, their roads, sidewalks, and other infrastructure were created to handle mixed uses and other NCD characteristics. Furthermore, public transit may already exist; if not, it may be more viable in the short term because of the existing population base. Urban infill in Baltimore, Denver, San Francisco, Pittsburgh, and Cleveland show how NCDs can help reinvigorate cities.

Baltimore's Digital Harbor

Through the initiatives of local and state officials, who wanted more urban revitalization and more reuse of land once used for heavy industrial operations, and the considerable efforts of developers, Baltimore, Maryland, is an example of effectively mixing office space within the community. Baltimore's Digital Harbor includes 35 miles of waterfront, an attractive environmental amenity for people and business. More than seven million square feet of new office space have been established around the harbor near residential areas, providing the opportunity to leverage more than $2 billion in private investment, create more than 30,000 new permanent jobs, and draw more than 13,000 new residents to city neighborhoods. The area had good "bones" for NCD; the infrastructure that has served the area for decades facilitates mixed uses, walkability, transportation options, and a vibrant downtown. Struever Brothers, Eccles and Rouse, a development company instrumental in the revitalization, elucidates Baltimore's metamorphosis: "Building on the proud 300-year history of our harbor, celebrated by the National Historic Seaport, the Digital Harbor is the natural transformation of Old Economy and maritime activity into the New Economy."[18]

The Commons, Denver

The desire for more effective urban revitalization helped this project. On 51 acres of vacant rail yards, a new neighborhood is being developed for some 5,000 residents. The area will include

shady, walkable streets, offices, shops, and entertainment venues.[19] It will take advantage of regional buses, a bus transit mall, light rail, and bike trails. Parking garages are on the project's edges. Residents will be able to walk a short distance to downtown jobs as well as to cultural and entertainment attractions in the nearby Lower Downtown Historic District.

The Digital Harbor and "Smart Growth" in Maryland

Maryland Governor Parris N. Glendening leads a comprehensive approach to "smart growth" in Maryland. Maryland's approach includes encouraging people to live near their workplaces; luring business into areas targeted for growth; using brownfields cleanups to revitalize cities; and offering transportation options to help reduce traffic congestion. The Digital Harbor is merging NCD principles with other state "smart growth" objectives.[20]

Live Near Your Work
The Digital Harbor is helping revitalize residential neighborhoods. According to research conducted by the Live Baltimore Marketing Center, employees of Digital Harbor companies are more likely than other workers to live in the city.

Brownfields
Maryland's brownfields programs are helping developers renovate industrial spaces. The Can Company project has received considerable praise. It includes a number of retail businesses, company offices, and the Emerging Technology Center. The developer took a former manufacturing facility, which sat idle from 1986 to 1996, retained its four buildings, and created a remarkable mixed-use facility that has benefited from being near local housing.

Transit
Studies are underway to expand light rail, bus, and shuttle service in Baltimore. Expanded transit will connect Johns Hopkins Medical Campus, Camden Yards, and University Center with the east side of the harbor, helping to link important parts of the city.

Mission Bay, San Francisco
This 303-acre project of former rail yards focuses on 31,000 jobs in five million square feet of commercial space and 2.65 million square feet of university buildings, primarily in biotechnology industries; 6,000 housing units, including affordable units; parks and open space; a 43-acre life sciences campus of the University of California at San Francisco; and a highly walkable street layout.[21] The housing density is over 30 units per residential acre. The surrounding urban grid is extended into the project area.

Crawford Square, Downtown Pittsburgh
This highly acclaimed, well-designed NCD project revitalized a long-blighted African-American neighborhood, but it offered several types of affordable housing for purchase and rent and avoided gentrification.[22] Many private and public organizations have supported the project. The streets are narrow, houses have front porches, yards are well-landscaped, and trees line the sidewalks. All units have garages or pads behind houses, or parking is clustered in small, landscaped off-street lots. Community-based planning and design were used. When built-out, there will be 550 homes on 17.5 acres, with a density of over 30 units per residential acre. About a third of the residents are from the original area, and African-Americans occupy about 80 percent of the units. The project has stimulated considerable economic revitalization, with

commercial and retail development around it. Residents have a five-minute walk to the business district and cultural amenities. Residents have raved about the "sense of community."

Washington's Landing, Pittsburgh

Brownfields are often located in downtown sites with tremendous development potential. For more than 100 years, this 42-acre island in the Allegheny River was used for industrial purposes.[23] Intensive government investment in land development, infrastructure, and cleanup was necessary to revitalize the site. Collaboration among federal, state, and local authorities, including nearly $11 million from several state agencies, was key. The total public and private investment in the development efforts approached $100 million. The result is a successful mixed-use community, including more than 100 residential homes, a number of commercial buildings with office space (including high-tech New Economy enterprises), a state agency, several light industrial manufacturing operations, and a restaurant. There is a park, a complete greenway for walking, running, and cycling around the island, and a number of recreation facilities. A converted railroad bridge serves as a walkway to the downtown area. The housing density is over seven units per residential acre.

Winchester Green, Richmond, Virginia

The Local Initiatives Support Corporation, a nonprofit organization, is an important source of funding nationwide for community development, especially in blighted urban areas. It invested $4.35 million with The Better Housing Coalition for this project, located in a low-income neighborhood that had considerably declined in an inner-ring suburb of Richmond. Winchester Green is an 80-acre, mixed-use, mixed-income, transit-oriented community that replaced a sprawling, dilapidated 1970s apartment complex. It provides 240 affordable rental town homes and garden apartments, a child care center, senior housing, parks and other green spaces, and a community center, and it uses energy-efficient, "green" building design. Replacing off-street parking areas with on-street parking decreased impermeable surface areas. Residential design was based on New Urbanist and Traditional Neighborhood Design principles, including front porches and different unit styles. The housing density is about five units per residential acre. Displacement of low-income residents was addressed, and residents were given a good opportunity to express exactly what they wanted in their community.

Revitalizing Cleveland Through an Inclusive Process

Cleveland has undergone a transformation is recent years, using an inclusive process to reinvigorate its mixed-use downtown. Like many cities in America, Cleveland languished during the last few decades. Investment in the city diminished as people moved to outlying suburbs. Cleveland fell into disrepair; during the late 1970s, the city was characterized by a burning Cuyahoga River, tremendous job loss, and a population crash. A city of one million people at its peak, Cleveland's population fell to 500,000.[24] More recently, the downtown area of Cleveland experienced population growth of 32.2 percent from 1990 to 2000, while the city as a whole lost 5.4 percent.[25]

Through a collaborative government-citizen-business process, Cleveland has rebounded. Using Baltimore's Inner Harbor as a model, the city invested in cleaning up its Lake Erie waterfront and worked closely with the Historic Gateway Corporation, a nonprofit redevelopment organization, to revitalize the nearby mixed-use community. The public-government-business partnership found sources of funding to reinvigorate the downtown, one project at a time. The Historic Gateway Corporation used a variety of tools, including federal historic rehabilitation tax credits; federal, state, and local grants; and other mechanisms to reinvest in the district. A most important factor was that Cleveland's building rehabilitation code helped spur

reinvestment. In the late 1980s, redevelopment of the Tower Building resulted in a building with office space, retail, restaurants, and a transit center. Two arcade buildings have been renovated, linking commercial, residential, and office spaces.

NCD for Suburban Redevelopment

Like urban infill, redevelopment of existing suburbs is land-efficient—it relies on land that has already been affected by development. Retail has a similar benefit, because it can rely on people living nearby to establish its viability early in the development process. Unlike urban infill, however, the infrastructure network within suburbs is often not very compatible with NCD. Over time, this requires connecting and expanding the road network and modifying other infrastructure to handle NCD development.

Post Addison Circle in Addison, Texas

This is an 80-acre, mixed-use project about 20 miles north of downtown Dallas.[26] This public-private sector initiative is aimed at creating a medium-density, mixed-use, walkable urban neighborhood within a classic "edge city" setting that is 80 percent built out. The community includes mixed uses, with apartments over retail shops and restaurants; office buildings; transportation options, including a pedestrian-friendly street network and public transit; a neighborhood park system; and design and planning techniques that help foster community support, including an open, inclusive planning process. Town planners first suggested creating an NCD during Addison's 1991 Comprehensive Plan and Vision 2020, a community-based visioning program. Through a public process, a community plan emerged to allow mixed uses. The first three completed phases include 1,334 apartments; 40,000 square feet of office space; and 111,000 square feet of retail, including several restaurants, a neighborhood market, a health club, an art gallery, and live-work apartments. Mixed-income housing has allowed a number of small businesses to locate in the community. With the completion of phase III more than 2,000 people will reside in this community. The residential density will be over 30 units per residential acre.

Pentagon Row, Arlington, Virginia

On only 18.5 acres, a creative developer saw the opportunity to take advantage of surrounding neighborhood assets, including a large mall, a major hotel, some 2,000 apartments, office buildings, and a Metro subway train station.[27] The developer said, "There was no downtown. There was no Main Street." The close-in, dense, and older suburban area (near Washington, D.C.) felt disconnected and had no neighborhood center. The solution? Create a small village within the area, with 300,000 square feet of retail, restaurants, and 500 residential apartments built on top of the commercial space. The housing density will be over 30 units per residential acre. The new town center will be a public plaza and an ice rink. This is a good illustration of how mixed-use, transportation, and housing requirements of NCD can be met by closely integrating an infill project with the surrounding community.

Eastgate Mall in Chattanooga, Tennessee

The county regional planning agency, at the direction of the mayor of Chattanooga, commissioned a study to revitalize Eastgate Mall, a 1960s shopping area.[28] The mall is being transformed into a town center. The designer conducted a week-long charrette, or interactive public meeting, inside the vacant mall, and more than 300 residents participated. Plans were created based on the advice and input of property owners, city officials, retail experts, and traffic engineers. A partner analyzed the market to determine untapped potential and an optimum mix of residential choices. A transportation analysis examined automobile, transit, bicycle, and pedestrian opportunities. The plan could be implemented in incremental phases, helping to ensure financial viability. It received immediate acclaim and was adopted by the city in 1998.

Construction of the new town square and three defining buildings is underway, and businesses are leasing storefront space on the square. In the first nine months, the shopping center properties went from less than 25 percent leased to more than 90 percent.

Grayfields—Suburban Redevelopment

Failed or so-called "dead malls" and other grayfields sites, such as empty big-box stores, are among America's best opportunities for developing transit-oriented infill neighborhoods, according to the Congress for the New Urbanism. PricewaterhouseCoopers estimates that as many as 140 regional malls in the United States are already grayfields, with another 200 to 250 such malls approaching grayfields status.[29] Together, these two categories represent 18 percent of all regional malls nationally.

Transit accessibility. Many grayfields are near transit lines. In addition, NCD redevelopment of grayfields cluster business and residences together, with densities high enough to support transit service.

Mixed-income housing. Housing affordability is a significant concern, but citizens often resist locating low-income projects in existing neighborhoods. Many grayfields sites can accommodate a neighborhood built from scratch, including a mix of housing choices for a mix of income levels, yet also be designed so that the NCD project blends in with the surrounding community.

Civic space. Many suburbs were built to serve one purpose, usually one or more housing subdivisions. This narrow focus often excluded civic spaces, which are an essential part of vibrant neighborhoods. Town centers with civic spaces are part of NCD projects in suburbs.

Greenfields NCD Development

Unlike urban and suburban infill, this application of NCD requires the conversion of open space, though less open space is converted than in a sprawl development. A significant population is not nearby, so it may take longer to establish retail businesses in greenfields projects. Because greenfields development starts from scratch, the developer can create the infrastructure network consistent with NCD, although it may take time to establish public transit.

Abacoa in Jupiter, Florida

Abacoa is a mixed-use development located in Jupiter, Florida. Approaching 10 years in the making, the project spans 2,050 acres of former farmland.[30] Each neighborhood is organized around a common square, and the connected street network and sidewalks allow pedestrian and bicycle use. Residents use the extensive network of trails designed to fit in with the natural landscape. Most houses face the street, and garages are located behind buildings. Nearly every home has a front porch, designed to reflect small town character.

Abacoa was named one of DigitalCity.com's "Best Places to Live." The project offers homes for a wide range of incomes, and entry-level homes remain affordable for younger professional families, which comprise a significant segment of the community. A trolley service provides residents an easy way to get to the town center. Outside the neighborhood, Jupiter offers numerous parks, access to the Intra-Coastal Waterway and nearby beaches, and close proximity to Palm Beach International Airport. Abacoa's master plan includes:

- 6,000 apartments and single-family homes, with housing density of over eight units per residential acre;
- a 60-acre preserve and greenways system (already built), with a second preserve planned;
- the Abacoa Town Center, which includes shops, restaurants, a 16-screen multiplex, offices, apartments (many of them above the stores and eateries), and an outdoor stage at its theater green;
- Florida Atlantic University, including the John D. MacArthur campus (including an NCD research center) and Honors College;
- Roger Dean Stadium, spring-training home to the St. Louis Cardinals and the Montreal Expos;
- two elementary schools (one already built) and a middle school;
- two million square feet of office space;
- a 25-acre town center with a 325,000-square-foot entertainment retail facility that can expand to 500,000 square feet; and
- a retail component with 40,000 square feet of restaurants and 84,000 square feet of neighborhood retail tenants to serve the local community, office workers, and university students.

Still very much a work in progress, Abacoa is spurring other development nearby, serving as an anchor for additional economic growth. As stated by George de Guardiola, president of Guardiola Development Ventures, Incorporated, the developer of Abacoa, the town "represents everything I believe in for a unified community. With all these unique and diverse activities and institutions, I believe we will have created a wonderful place where people can come together . . . It has been very challenging. You really need conviction and you must believe in what you are doing."[31] The developer is now facing a challenge—early residents are not supporting construction of commercial space—but the developer remains committed to the mixed-use principle.

The developer also made these important observations:

> Financing is much harder for an integrated New Urbanism project, particularly on this scale. We should have had lenders on board from the beginning, but we didn't. But we ended up with great financing from GMAC and Lehman Brothers. There was no municipal financing from the town of Jupiter, but a special taxing district, a community development district that issues bonds, provided infrastructure financing.
>
> The whole administrative review process is very awkward. The municipality of Jupiter reviews the plans. A regional commission, Treasure Coast Planning, also reviews them. And then Florida's Department of Community Affairs reviews. A major problem is that the guidelines and laws in Florida do not recognize the merits of New Urbanism. Rather, they are based on the suburban subdivision model. So we had to write our own zoning code—Jupiter didn't have one. We wrote our traffic code. It was a cautious cooperative effort between us and the government.

Orenco Station in Hillsboro, Oregon

Orenco Station, just outside Portland, is the winner of numerous planning awards and one of the most well-known NCD projects in the country.[32] The 200-acre, transit-oriented development is adjacent to the Westside light rail station at Orenco. The developers worked closely with the City of Hillsboro and other jurisdictions to complete the project.

When the developer acquired the parcel in the 1980s, the property was zoned for commercial use. In the early 1990s, Portland's Westside light rail line was approved, bringing mass transit service to the area and changing the zoning from industrial to residential. Orenco Station was given a town center designation, allowing the property to be developed for mixed uses.

The developer worked with the local government to develop a plan adjacent to the light rail station and just south of a new Intel facility. Orenco Station includes five acres of pocket parks, scattered throughout the neighborhood, as well as a large centrally located park. The mixed-use center contains approximately 27,000 square feet of street-level retail space and 30,000 square feet of office space above. The location is at the heart of high-tech employment, with 25,000 cars a day passing the main street. Most of the homes have front porches, as well as garages placed in back and accessed by alleys, and many have "granny flats" over garages, which can be rented. The Orenco Station master plan won one of Governor John A. Kitzhaber's Livability Awards in 1998.

Village Homes, Davis, California

This is one of the oldest and most successful NCD places in the nation. It was completed in 1982, despite considerable obstacles from government and difficulty in obtaining financing, with rejections from 20 lenders initially. Many of the pioneering concepts employed have been well tested over time.

There are 240 homes on a 60-acre site, including 220 single-family detached homes and 20 rental apartment units. The average residential density is 7.7 units per residential acre.

Forty percent of the site is for various types of green space, including a village green, agricultural land that provides food for residents, greenbelts, and numerous fields and playgrounds.

Narrow streets, 20 feet to 26 feet wide, with extensive shade trees minimize water runoff and reduce ambient temperatures 10 degrees to 15 degrees during the hot summer months. Land used for streets is just 20 percent.

The commercial center has 21 businesses and a restaurant, and an inn has recently been completed. The community center provides a daycare facility and a small suite of offices with rental apartments above.

There are two interlocking circulation networks, one a set of roads and the other, larger system of pedestrian and bike sidewalks and paths. Many residents can bike to work at the nearby University of California campus, which is the major employer in the area. Car ownership is 14 percent less than normal and VMT is 16 percent less than other places in the area. The average walking time to the grocery store is about 10 minutes, 4.6 minutes to the office complex, three minutes to the community center, and less than one minute to the nearest park.

Instead of storm water drains, there is a system of drainage swales landscaped like seasonal streambeds with rocks, bushes and trees, and infiltration basins. The lots are graded away from streets. The design saved about $800 per lot.

A study verified that design fostered community. Residents of Village Homes knew 42 people in their neighborhood, compared to 17 in standard suburbs; the average resident identifies four of their best friends in the community, compared to 0.4 for conventional places; residents spend 3.5 hours a week with friends in the neighborhood, compared to 0.9 hours in conventional places; the crime rate is only 10 percent of the Davis average. Eighty percent of residents participate in community activities.

All homes are solar heated through passive or active systems and most have solar water heaters. Energy costs average 50 percent to 60 percent of typical subdivisions in the area.

Houses have sold quickly and at a premium over other Davis developments, in 1995 homes sold for 13 percent more than the equivalent-sized homes in a traditional nearby sprawl subdivision.

Investors made 30 percent annually on their investment.

Whitehall, New Castle County, Delaware

This is one of the most impressive planned NCD places. It is on the Chesapeake and Delaware Canal in a state- and county-designated growth area. More than most, this plan is based on a very high level of employment in designated office centers and light industry locations constituting some 500 acres. Another 100 acres of office and retail space are integrated into the three villages or adjacent to the highway access. Very explicit marketing is being done to attract companies that value having their workers live close to their jobs and other amenities. Some 55 percent of the 2,047 acres, owned by the Welfare Foundation, will be preserved, most of it contiguous. The master plan reflects careful attention to respecting the natural geography and environmental conditions. The overall design and street grid is pedestrian-friendly. The villages will be connected to each other and to the employment centers via a system of open space, local streets, pedestrian walkways, and transit. Residential areas are designed to be within a 10-minute walk to open spaces at the edge of each village. Build-out is planned for three defined phases covering a total of 30 years. But the project is not going forward.

When the New Castle Department of Land Use decided to reform the county's unified development code (UDC), Whitehall developers worked with them to support changes that would allow NCD principles to be used in new developments. When the new code was published, however, the plan still needed revision to comply with regulations. The developers and county officials worked together for nearly four years. But in the face of the restrictions created by the county's zoning regulations, the developers decided that the business risk was too great for the project and withdrew their plan. Although the land where the community was to be located contained parcels previously zoned for business and parcels zoned for suburban development, the UDC did not allow enough flexibility, according to the developers. A smaller version of the plan was not deemed feasible. Instead, they are working with the state to first construct an employment center, which is supported by state and local governments because of recent job losses in the area. The developers hope that, once the employment center is established, they will be able to continue with the other portions of the original plan.

3. Benefits of New Community Design

The benefits of NCD are often seen in comparison to conventional development. They also have been categorized in three ways: personal, business, and public.

Comparison of NCD and Conventional Development

The following comparison illustrates some essential distinctions between NCD and conventional, sprawl-type suburban subdivisions.

New Community Design Development	***Single-Use, Sprawl-Type Development***
Synergistic effect of mixed use, in which residential and commercial uses support each other and contribute to long-term vitality	No built-in market for commercial uses, and no nearby amenities for residential uses
Community interaction and civic life supported by design	Design emphasizes privacy, not community interaction
Transportation choice and walkability	Automobile dependence
Narrower, connected streets with tree-lined sidewalks	Fewer, wide, disconnected streets and cul-de-sacs without sidewalks
Planned open space designed for gathering places and diverse recreational activities	Residual open space
Efficient use of infrastructure	Less efficient use of infrastructure and higher costs for new infrastructure
Houses closer to street, with porches	Houses without porches and with larger setbacks
Diverse housing for different incomes	Single-family detached houses for a limited range of incomes
Efficient use of land; high housing density	High consumption of land; low housing density
Supports regional environmental goals—reduced land consumption, improved regional air and water quality	Contributes to regional environmental degradation—increased land consumption, diminished air and water quality
Linked to adjacent communities	Developed separately from adjacent communities
Enhances and complements neighboring or surrounding community	Not integrated with neighboring or surrounding community
Pedestrian-friendly design, mixed uses, and nearby green spaces promote health	Automobile-dependent design and single use contribute to obesity and related health impacts

Personal Benefits

NCDs Provide Choices

With America's growing population, the repercussions of sprawl are becoming clear, and many Americans, particularly young professionals and aging baby boomers, are seeking alternatives.

Research has found that only about 30 percent of homebuyers are comfortable with suburban sprawl places, and 60 percent are "tired of the sterile uniformity of most suburbs."[33] NCD provides people with more choices. They can live in revitalized urban areas, retooled suburban developments, or new greenfields developments. They can live near their work. They can reduce their dependence on automobiles. They can get ready access to urban "street life." They can attain a lifestyle that is more consistent with their environmental beliefs. They can have a more significant choice in the housing market.

NCDs Promote Better Health

At the same time many Americans have become health conscious, the nation is facing a near epidemic of obesity that is causing numerous health problems for children and adults. The walkable neighborhood and local recreational features of NCDs have drawn strong support by health care professionals. Providing an opportunity for people to reduce their time in traffic congestion is also seen as a health benefit—directly because of stress reduction and indirectly by providing more free time for health-promoting activities.

Enjoying a Healthy Neighborhood

NCDs Can Yield Financial Benefits

Even without access to public transit, car use for everyday errands can be greatly reduced in an NCD community. On a typical day in a traditional sprawl suburb, the average married mother with school-aged children spends 66 minutes driving—taking more than five trips and covering 29 miles.[34] That's without commuting to work. Living in an NCD place might even allow some families to have fewer cars. Just minimizing time in traffic congestion can save considerable money by saving fuel and car maintenance costs. In some areas, the reduction in car use means that people may qualify for a location-efficient mortgage supported by Fannie Mae. Research shows that residents of neighborhoods that are compact, densely populated, and close to transit own fewer cars, drive less, and spend an average of $7,000 less annually on transportation. The location-efficient mortgage boosts a homebuyer's borrowing power. For instance, a household making $50,000 may qualify for a 30-year loan of $163,000 at 8 percent, using conventional underwriting guidelines; using location-efficient mortgage services, that household could qualify for a $213,000 mortgage—depending on how "location-efficient" their desired piece of property or condominium is.[35]

NCD Addresses Frustration

Many people are angry. In the last five years, sprawl issues have captured the public's attention. Many groups with a variety of agendas have co-opted the terms "sprawl" and "smart growth," seeking to advance their causes under a "stop sprawl" mantra. Some groups seek not to help

guide growth effectively, but rather to stop it altogether. Divisive, regulatory ballot initiatives reflect the adversarial approach many people and local groups bring to the table unless alternatives to rapid development on open land are provided. NCD is such an alternative. It addresses quality-of-life and quality-of-place impacts from conventional growth patterns. NCD helps shape growth that is consistent with locally determined growth objectives, respects private property rights, and offers hope for people searching for greater livability. By offering a positive option for those unhappy with sprawl, NCD addresses personal frustration about losing quality of life, regardless of relative affluence.

Business Benefits

NCDs Attract and Retain Business and a Strong Workforce

As part of economic development strategies, NCD can help states and communities attract workers. New Economy businesses are finding that they must offer a variety of location amenities to lure and keep good people. Place is more important than ever. More than other cohorts, young knowledge-economy workers value the attributes of a location: scenic beauty just outside the window, nightlife a short walk away, and a palpable sense of community in the neighborhood. *The idea that people can live and work in a very attractive community, where they can enjoy outdoor activities within a few minutes and avoid wasting a lot of time in traffic congestion to get to work, play, and shopping, has rapidly become a major marketing advantage of the best NCD places*.

Many large and small companies are finding NCD places a lot more attractive than conventional suburban office parks and downtown locations because of the advantages to their workers, which benefit companies through improved worker productivity and retention. For example, in 1994, Apple Computer relocated 500 new jobs to Laguna West, a new traditional-style neighborhood near Sacramento. State Farm Insurance located more than 1,000 jobs at Northwest Landing, a new pedestrian-friendly community near Dupont, Washington. Microsoft is planning to locate a three-million-square-foot campus at the Issaquah Highlands Town Center, adjacent to Seattle.

Richard Florida, who has studied the trends of New Economy business and the location choices of its workforce, found that technology workers place more emphasis on lifestyle factors such as the environment and the recreational quality of a region.[36] NCD infill projects can help older communities attract and keep such workers in locations that want growth. The National Town Builders Association promotes NCDs, including New Economy Towns, its own variation of NCD, which include walkable and transit-accessible neighborhoods, preservation of the best features of the land to maximize quality of life, and town centers. [37]

NCDs Create New Opportunities for Developers and Builders

In looking at successful infill NCD projects in urban and suburban areas, one thing becomes evident. The mixed-use and higher-density features of NCD invariably lead to more—not less—building at a given site. Even for a greenfields NCD, the amount and variety of construction can be much greater because of a large number of housing units on a given site and because of construction for retail, commercial, and civic buildings. As NCD supply expands to accommodate consumer demand, the real estate industry will find itself restructuring, with some companies adapting to the style that preceded the sprawl, single-use paradigm that emerged after World War II. NCD, after all, is really not something brand new. It is the approach that predominated in the United States much longer than the single-use, sprawl system, and still does in most countries. In every important respect, NCD is returning to the "old fashioned" neighborhood-oriented style of living that has a much longer history of success than sprawl.

Some companies will stick with the conventional single-use development business of the past 50 years while others will embrace and profit from NCD.

Public Benefits

NCDs are Cost-Efficient

Sprawl is costly for government. Infrastructure costs are comparatively high, and the environmental benefits provided by open spaces are lost after conversion, although these are hard to quantify.

Generally, providing public infrastructure to NCD development within an existing urban service area (i.e., infill development) is less costly than providing infrastructure to low-density development far away from the urban and suburban core. Whereas development within or close to existing developed areas can rely on the road network, water and sewer lines, and storm-water runoff facilities already in place, this entire package of infrastructure must be provided to development past the urban or metropolitan edge. Furthermore, infrastructure takes more land per housing unit to service lower-density development, simply because the units are farther apart. The costs per unit of maintaining this infrastructure over time are similarly high. Thus, the cost of providing infrastructure to low-density development away from existing developed areas is more expensive and getting worse, making NCDs increasingly cost-effective.

Even greenfields NCD projects offer some savings over conventional, sprawl subdivisions. For example, in a proposed ordinance, Orlando, Florida, offered a 30-percent reduction in traffic impact fees for an NCD development, because transportation models indicated that driving would be reduced.[38] A study by the Canada Mortgage and Housing Corporation compared a conventional development (4,505 dwellings) with an NCD alternative (6,857 dwellings). The per unit NCD savings were: roads, $3,054; storm-water management, $1,499; transit, $1,330; water, $1,099; policing, $1,016; and sanitary services, $975.[39] The total infrastructure savings for the NCD alternative would total $61.5 million.

A study found that if 25 million units of new housing in the U.S. were to be provided between 2000 and 2025 in a more space-efficient way, the nation would preserve more than three million acres of land, require 3,000 fewer new miles of state roads, and need 4.7 million fewer water and sewer laterals.[40] The result would be a savings of $250 billion.

Adoption of Envision Utah's Quality Growth Scenario, with its emphasis on compact, walkable neighborhoods, would save an estimated $4.5 billion in transportation, water, sewer, and other utility infrastructure costs by 2020, compared to a continuation of the current low-density growth pattern.[41]

NCDs Can Help Alleviate Traffic Congestion

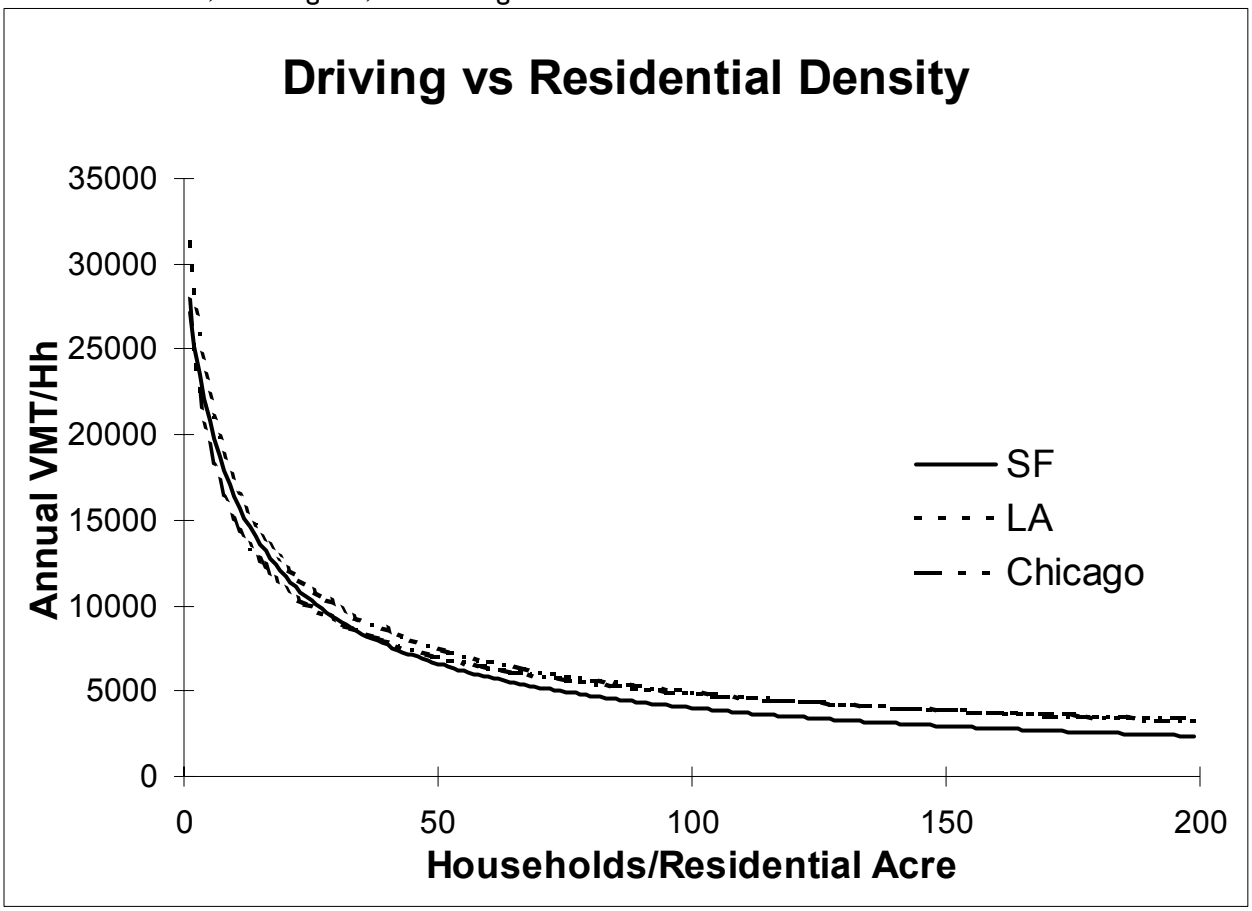
A variety of factors affect travel, including density and clustering; land-use mix; and street, parking, and building design. A combination of land-use policies, implemented with transportation-demand management strategies, can have a significant effect on travel behavior.[42] For example, increasing land-use density may reduce per-capita automobile use by only a few percent; but when combined with pedestrian and cycling improvements, transit-oriented development, mixed uses with employment opportunities, and parking management, it may cause a 15-percent to 25-percent reduction in VMT.[43] Such reductions would improve air quality and congestion. NCDs attempt to capture all of these transportation benefits. Data from the National Personal Transportation Survey show that urban residents make about 25 percent

fewer automobile trips than the national average, and twice as many walking and transit trips. People in NCD places are likely to yield similar results. A number of research studies have found reductions in the 20-percent to 30-percent range for higher-density locations.

One study found that, after controlling for income levels, VMT in households in traditional higher-density neighborhoods was nearly 50 percent lower than in more recent, standard suburban development.[44] A recent detailed study of the total metropolitan areas of San Francisco, Los Angeles, and Chicago, including low-density sprawl areas and high-density urban ones, presented compelling data on the effect of residential density on VMT (Figure 4).[45] It should be noted that many of the best NCD projects have reached densities of 20 households to 30 households per acre, which can result in substantial reductions in VMT from sprawl densities, which are often less than 2 households per acre in newer developments.

Similar data for different areas in Atlanta are consistent with the data shown in Figure 4. But the variation in household density was from one household to five households per acre, and the corresponding spread in VMT per household was from 100,000 miles to 30,000 miles.[46] In other words, the low densities in Atlanta correspond to the beginning, sharply rising part of the curve shown in the figure.

Figure 4. The reduction in vehicle miles traveled per household as residential density increases, for San Francisco, Los Angeles, and Chicago.



NCDs Help Retain Natural and Cultural Amenities

Each state and community has a unique set of physical and cultural conditions, many of which are deemed highly desirable. NCDs can help preserve and accentuate these characteristics. In the Southwest, for example, NCDs use building materials that reflect the region's arid environment. Greenfields NCD projects use the least amount of open space, including farmland. Infill NCD projects save even more open space, because they have the highest housing densities. Besides saving land and natural habitats, NCDs reduce water and air pollution through a number of mechanisms, including reducing surface-water runoff and having more trees and vegetation that reduce pollution levels.[47] With NCD, historic buildings and sites are restored and reused. NCD honors the character of places. It will help preserve rural America. The character of rural areas is defined by a sense of development surrounded by open space. As soon as it becomes open space surrounded by sprawl development it no longer looks rural or works rural. NCD helps preserve the functional relationship between the built environment and the surrounding landscape and respects the limited carrying capacity of the land for development.[48]

4. A Checklist for Evaluating Projects

The NGA Principles for Better Land Use were used to develop this checklist. The Appendix presents a more detailed discussion of the NGA Principles and their translation into evaluation criteria. For simplicity, questions are used for the format, but local communities and other parties may want to modify the checklist to reflect their own priorities. There is no intent to define what is "right" or "wrong." The goal is to provide a more systematic approach to understanding and evaluating information. For some projects, all of the questions may be answered in the affirmative. This means that the project is fully consistent with the NGA principles for better land use and "smart growth" approaches to growth management. But many projects will not satisfy all the criteria, even though they have many features desired by a community and which may also be significant alternatives to conventional low-density, automobile-dependent, single-use projects. The challenge is not to lower the standard too much, so that places that satisfy only a few criteria are not misleadingly labeled "smart growth" or NCD.

It would be unreasonable to expect that all projects or communities would be completely consistent with all the criteria. However, it is also inappropriate to label a place as a "smart growth" or NCD community if only a few of the criteria are satisfied. Some of the most basic criteria, like mixed land uses, support other criteria. Criteria questions Number 1 through 15 are the most important ones; they correspond to the fundamental goals category of six Better Land Use principles discussed in the Appendix.

Incomplete information could lead to difficulties in forming declarative answers to some questions, prompting the user to seek more information. Alternatively, rather than a "yes" or "no" answer, some people might prefer using low, medium, and high answers for the level of consistency of the project, or even numerical scores for the questions. To illustrate use of the checklist, an actual project, still at the conceptual stage but approved by local government, has been evaluated with the checklist.

CHECKLIST FOR APPLYING THE NGA EVALUATION CRITERIA FOR NCDs

NGA Principle for Better Land Use	***Criteria Questions***	***Project Consistency (yes or no)***
Strengthen and encourage growth in existing communities	1. Is the location in an already-developed area? *The key need is to see if public services and infrastructure have already been created for the location.*	
Include mixed land uses	2. Is there a mix of housing, office space with significant employment opportunities, schools, retail shopping, outdoor recreation areas, and civic/public spaces and buildings? *For infill projects, it may be necessary to consider what is available in neighboring areas.*	

Create a range of housing opportunities and choices	3. Does the housing include different types of homes, such as single-family detached, multifamily apartment buildings, and condos for purchase or renting; and do they cover a range of prices to address a full spectrum of income levels, including affordable housing? *For infill projects, it may be necessary to consider what is available in neighboring areas. Distributed affordable housing in the 10-percent to 15-percent range is feasible.*	
Preserve open space, farmland, natural beauty, and critical environmental areas	4. Does the project avoid converting working lands, such as farms and ranches, into development? *Former working lands that are no longer being used and that are zoned for development are acceptable.*	
	5. Does the project avoid fragmenting existing green space, especially natural habitats and forests? *The need is to understand the original environmental setting and whether development will cause harm by isolating green spaces and block the ability of species to remain healthy.*	
	6. Does the project design protect the local watershed? *Water runoff and other factors should be examined to determine whether the development is harming the watershed. To minimize water runoff, the fraction of land paved over for streets and parking typically should not exceed 20 percent to 30 percent.*	
	7. Does the project location avoid increasing the risk or negative impacts of natural disasters? *Consideration should be given to what kinds of periodic natural hazards exist for the site and whether even the best forms of NCD would be inappropriate for a specific location that is vulnerable, for example, to flooding, wildfires, mudslides, beach erosion, or high winds.*	
	8. Does the project use compact design to minimize the amount of land per dwelling unit? *The average number of housing units per residential acre is the appropriate measure. The best greenfields NCD projects will have densities in the range of at least five units to 10 units per acre, and often much higher. Infill projects will usually have at least 20 units per residential acre. Much depends on the mix of housing; if only single-family detached homes are included, lower densities will prevail.*	

	9. Does the project maintain or create green spaces throughout the new community for public and recreational uses, including continuous green pathways for biking and walking and pocket parks in neighborhoods? *The best greenfields NCD projects will have 20 percent to 50 percent of the total land area as diverse and well-dispersed green spaces. Infill projects may have as little as 5-percent green spaces.*	
	10. Does the project use energy-efficient designs and green building methods to reduce offsite land use? *The goal is for construction materials and home design to be consistent with the highest energy efficiency standards, and not just for inside appliances.*	
Provide a variety of transportation choices	11. Does the project provide convenient access to public transit? For larger projects, does transit operate within the community? *Any form of public transit is acceptable. Convenience means that residents can walk to public transit within about 10 minutes to 15 minutes. Housing densities above 15 units per residential acre aid use of transit. The difficulty in having transit options for greenfields NCD projects places even more importance on the mixed-use criterion, particularly with respect to employment opportunities.*	
	12. Does the street layout or grid provide multiple access points to and from the surrounding areas as well as multiple paths for travel through the community by vehicles and bikes? *The measure is connectivity of streets and greenways throughout the community, so people can have convenient access to all parts of the community by walking, biking, or driving. Cul-de-sacs should not be part of the street design. Only one way into and out of the community is not desirable, because it will cause traffic congestion.*	

	13. Is teleworking facilitated by broad-band capabilities in homes? *Today, most telework opportunities require more than the use of the phone and mail. High-quality Internet connections are needed. Home designs now can include special attention to work areas. This complements the presence of employment opportunities and works toward the goal of minimizing dependence on cars.*	
Foster walkable, close-knit neighborhoods	14. Do the design and layout of buildings and streets promote one or more real neighborhoods by facilitating interactions among residents, including diverse gathering places? *The best NCD projects take every conceivable opportunity to promote neighborly interactions. Front porches and garages behind houses are hallmarks of NCD. Community centers, public spaces, benches on sidewalks in commercial areas and in green areas, pocket parks, and trails are key features.*	
	15. Have the streets been designed with sidewalks, appropriate lighting, and connectedness, to promote easy and safe walking? *Any design that lacks sidewalks on all streets is inconsistent with NCD. In the best NCD projects, landscaping along sidewalks makes them comfortable and attractive. Residential street widths are often in the 20-feet to 22-feet range (compared to conventional streets of 36 feet), and a 600-foot grid size is often preferred to reduce vehicles per day.*	
Take advantage of existing community assets	16. Does the project blend in with the environmental setting and cultural features of surrounding areas? *Good NCD design honors the original natural setting of the location and incorporates environmental assets into the design, in contrast to giving priority to using land for construction. From a visual and aesthetic perspective, the NCD place should blend harmoniously with the surrounding area, in both physical and cultural terms. Architectural features should be consistent with the surrounding community.*	

	17. Has the project considered the use of existing brownfields or grayfields sites for some or all of the needed land? *The goal of more efficient land use requires that NCD projects give serious consideration to using land that is abandoned or greatly underused because of environmental or other reasons. For brownfields sites, this requires attention to any cleanup requirements for using the land for residential purposes, unless the contaminated area is small enough to accommodate some nonresidential component of the project.*	
Promote distinctive, attractive communities with a strong sense of place, including the rehabilitation and use of historic buildings	18. Do the design, layout, and mix of land uses provide a distinctive style and feel to the place, with all elements blending together harmoniously? *This is a qualitative judgment. In the best NCD projects, the designers and planners have carefully considered all the mixed uses and how their layout and architectural features conform to a well-conceived style of the community. The chosen style is often linked to the history of the site and surrounding areas, or to the style of the surrounding community in the case of an infill project. This does not at all imply dull consistency among homes. In good design, there is diversity within a consistent style.*	
	19. Has the project committed to using older and historic buildings on the original site? *For both infill and greenfields projects, the best NCD developers make creative and effective use of structures on the original site, especially ones with historic and architectural significance.*	
Encourage citizen and stakeholder participation in development decisions	20. Have the developer and local government agencies used the best techniques to fully engage all categories of local stakeholders in meaningful activities to guide the design of the community? *The best NCD developers do not bring a fully worked-out community design to the public or government officials. Today, the best practice is to use new and advanced forms of digital technology tools, visual preference surveys, and highly interactive meetings that solicit local input in a collaborative design process. Meaningful activities are ones that provide for true participation in the development of the community design, not merely an opportunity for people to react to a developer's design.*	

Make development decisions predictable, fair, and cost-effective	21. Has the local government adopted zoning codes that give as much support for a mixed-use community as for a typical single-use project (e.g., a sprawl housing subdivision, strip mall, or office park)? *Developers and others who are advancing an NCD project need to take some responsibility for improving local codes that do not support NCD. Many NCD developers have been successful in obtaining new parallel or overlay codes that remove the need for obtaining high-cost variances from codes that do not by right support NCD.*	
	22. Does the appropriate authorizing or regulatory agency have a process that prevents lengthy and unpredictable delays for developers? *Here too, developers and others supportive of NCD can work for improvements in local ordinances and procedures, such as giving priority to NCD applications and guaranteeing decisions within a short time.*	
	23. Has the developer made clear how the project may be constructed in different phases over extensive time periods, yet be mixed-use, and is it clear how the original plan will be followed? *The best NCD developers make clear exactly how a project will be executed over time and how market uncertainties will affect decisions to implement the original community design and plan. It is important to be concerned about significant periods when there may be no authentic mixed uses or diverse housing.*	
	24. Will impact fees or other measures reduce uncertainties about the ability or willingness of local government to pay for all needed public services and infrastructure? *Careful attention should be given to whether the local government is empowered to levy some form of impact fee; whether any such imposed fees will cover all public services and infrastructure; and if those fees will match future costs. The major concern is that some public services and infrastructure, particularly schools, may not be provided for a new development, reducing the quality of life for residents and jeopardizing full build-out of all components of the original community design.*	

Opportunities for Using the Checklist

The checklist could be refined for particular applications. For example, for some uses, questions 1 to 15 might be sufficient, because a project was being considered at any early stage.

Charrettes, Workshops, and Public Meetings

Any type of public meeting that involves stakeholder participation could use the preceding checklist as a tool to evaluate a conceptual plan for a new community design project, or even a more advanced, detailed plan for one. By using the checklist, citizens would be able to structure their search for important information that they want from the developer or other entity attempting to obtain community support for the project.

Interactions with Realtors and Developers

People searching for a community with NCD or "smart growth" features could use the checklist when they visit new or older developments and talk to salespeople or residents already living in the community. Only with a systematic approach to getting information will consumers avoid places that are just prettier sprawl places, but not authentic NCD communities or neighborhoods they are seeking.

Local Government Agencies and Elected Officials

Developers often attempt to work closely with local governments very early in the process of gaining permits, approvals, and variances. Professionals and elected officials could use the checklist to ensure they obtain the best information about a proposed project and to understand whether it will satisfy public demand for authentic NCD places.

Businesses

Many types of business enterprises must make difficult decisions about whether or not to locate a retail establishment or an office in a new or existing community. Although a developer may market its project as NCD to meet consumer demand, the business could use the checklist to test the project's consistency with NCD and "smart growth" principles. Will the project offer all the amenities and features wanted by workers seeking the NCD style of living?

Investors and Lenders

Sources of financial support for development projects will increasingly find it necessary to distinguish high-quality NCD projects from a multitude of ones that may be far less consistent with NCD and "smart growth" principles. As consumer demand becomes clearer to the industry, more and more developers and builders will attempt to capture some of the NCD market, regardless of their experience and expertise. Therefore, investors and lenders could benefit from using the checklist.

Builders

Firms that serve as developers generally find builders to partner with, and several builders may be involved for larger projects. As builders consider participation in projects, they too could benefit from using the checklist. They may have become aware of the growing market for NCD communities, but they too need to verify that a project has the maximum consistency with NCD and "smart growth" principles.

Evaluations for Awards

Governors, other elected officials, and various organizations, including trade associations, civic organizations and environmental groups, could use the checklist to evaluate projects and communities for awards to recognize outstanding designs that serve the public by providing alternatives to conventional sprawl subdivisions.

Researchers

As the national "smart growth" movement has expanded, there is increased emphasis on conducting research on many key issues, like transportation and health impacts. Inevitably, data are desired on "smart growth" communities versus conventional places. An important decision is how to define a "smart growth"-type place, and use of the checklist for this purpose could be most productive.

Case Example

Although this example is for an actual project and all of the information has been obtained from public records, none of the actual names of places are used. The proposed 1,000-acre, 3,200-home planned community illustrates many of the issues confronting NCD projects nationwide. It is a 20-year greenfields project about one mile away from a small historic town and county seat. The location is in a largely rural state near a major metropolitan area in another jurisdiction. The project location is in part of the state that in recent years has undergone major residential growth, because it attracts people working in the metropolitan area who are seeking lower-cost homes and, perhaps, a more rural setting. In the 1990s the county population increased 17 percent, and about 40 percent of county residents commute to the metropolitan area; this fraction may increase. The proposed project, with some 10,000 residents at full build-out, is triple the population of the nearby town. From its inception, there has been strong local opposition. Nevertheless, in May 2001, the County Planning Commission approved the project.

The developer has consistently described the project as "smart growth" and a form of New Urbanism. Opponents have called it "dumb growth" and "sprawl." Applying the NGA checklist illustrates the complexities and difficulties in assessing a project's consistency with "smart growth" principles. A number of sources provided considerable information, including transcripts of public meetings, legal documents, and local and regional newspaper articles.

1. ***Is the location in an already-developed area?***

No. The site does not have any existing infrastructure.

2. ***Is there a mix of housing, office space with significant employment opportunities, schools, retail shopping, outdoor recreation areas, and civic/public spaces and buildings?***

No. Although described as a mixed-use project, a key element is missing, namely significant employment opportunities. Although the developer has talked about the benefits of having an employment center, it did not include it in its plans. Nor is there any evidence that the developer seriously sought a company that might have been interested in the project because it saw the value of establishing an office in the area. This has been a local issue, because the county has had little economic growth, aside from the residential development associated with becoming a "bedroom" area for commuters to the metropolitan area. Some opponents have focused on the high costs to government and taxpayers of residential development. Moreover, the developer has indicated that the retail space might not be built for 10 years, while waiting for enough market demand within the new community. So, for some 10 years, the community

would not be mixed-use; this could stimulate construction in the area of conventional strip malls or big box stores.

On the positive side, the developer said: "Located in the eastern village and the central village centers, community-serving retail will be located at the ground floor of low-scale, appropriately designed commercial buildings fronting on major streets or civic spaces. Smaller-scale 'corner markets' will also be located near the center of several neighborhoods."

3. *Does the housing include different types of homes, such as single-family detached, multifamily apartment buildings, and condos for purchase or renting; and do they cover a range of prices to address a full spectrum of income levels, including affordable housing?*
Yes. The plan includes mostly single-family detached homes and some townhouses and multifamily dwellings, and the intention is to appeal to mixed incomes, including rentals. The developer said: "A mixture of housing types, including single-family, townhouses and multifamily apartments will be woven into the neighborhoods, avoiding 'pods' of single-use development. The total number of residential units to be developed, over the 20-year build-out period, will consist of approximately 1,950 single-family units (on lots of varying size, ranging from 6,000 to 15,000 square feet), 800 townhouse units, and 450 multifamily units."

4. *Does the project avoid converting working lands, such as farms and ranches, into development?*
No. The developer said that "this site is presently utilized for agricultural purposes," but it is within the designated growth area established for the town. The loss of farmland in the area in recent years has been substantial, and the loss of traditional rural character in the county has been a major local issue.

5. *Does the project avoid fragmenting existing green space, especially natural habitats and forests?*
Yes. The location and the retention of green space appear to avoid major fragmentation.

6. *Does the project use compact design to minimize the amount of land per dwelling unit?*
No. The project is not a good example of compact design. At full build-out, the number of households per residential acre would be less than five, which is similar to many sprawl places. Green space is estimated at 18 percent, which is not overly high for an NCD community.

7. *Does the project design protect the local watershed?*
Yes. There is no information to indicate that the development will harm the watershed.

8. *Does the project location avoid increasing the risk or negative impacts of natural disasters?*
Yes. There is no information to indicate that the project would adversely impact the risk or effects of natural disasters.

9. *Does the project maintain or create green spaces throughout the new community for public and recreational uses, including continuous green pathways for biking and walking and pocket parks in neighborhoods?*
Yes. The plan does a good job of maintaining and using green spaces throughout the project area. The developer described the project as: "compact in design and layout, to preserve natural open spaces. Parks and other civic uses are located within a five-minute walk of all residents'

homes. Larger scale regional recreation open spaces (soccer/play fields, baseball fields, etc.) which will be available to all county residents, are located throughout the community as part of the project's connected and distributed open space system design."

10. ***Does the project use energy-efficient designs and green building methods to reduce offsite land use?***
No. There has been no indication of a focus on energy efficiency or green construction.

11. ***Does the project provide convenient access to public transit? For larger projects, does transit operate within the community?***
No. The developer has talked a lot about the benefits of transit-oriented development. It said: "Because you have two major rail lines…there are some opportunities, over time, to take advantage, we think, of those two lines as potential means of reducing the amount of travel, particularly by car, for those who would be traveling out of the county to get and from work." The developer also talked about the possibility of providing some shuttle service from the town center to the nearby train station. However, unlike many NCD projects, the developer has not made a firm commitment to doing something like this in its original plans and commitments. Its estimates of vehicle use are high, probably doubling local road use eventually, and local road congestion is already a big issue. This project posed a very good opportunity for designing a transit-oriented community at the very outset, because of the high probability that most residents would be commuting to the metropolitan area.

12. ***Does the street layout or grid provide multiple access points from and to the surrounding areas, and multiple paths for travel through the community by vehicles and bikes?***
Yes. The street design conforms with NCD approaches. The developer said: "One hallmark of great neighborhoods is a hierarchy of well designed, pedestrian friendly streets. The streets…will vary in size and character from small, neighborhood tree-lined streets to a broad, central tree-lined park boulevard. Streets will have wide sidewalks, street trees, coordinated human-scale street lighting, and signage. Major and minor streets are designed for the pedestrian first, then the automobile, ensuring livability as well as mobility…The walking/biking paths will interconnect with the sidewalk network to make the entire community pedestrian- and bike-friendly."

13. ***Is teleworking facilitated by broad-band capabilities in homes?***
No. There has been no mention of broad-band connections or special live-work housing designs to promote telework.

14. ***Does the project blend in with the environmental setting and cultural features of surrounding areas?***
Yes. The plan does a good job of blending in with local environmental and cultural features, to the extent that a new greenfields community very close to an old, historic town can achieve this. The developer said that the project would be "designed as an extension" of the nearby town, "patterned" after the neighborhoods of five towns in the vicinity, and "cognizant of the site's rolling topography."

15. ***Has the project considered the use of existing brownfields or grayfields sites for some or all of the needed land area?***
Yes. Testing confirmed some areas of toxic soil contamination, which the developer will address according to state requirements.

16. ***Do the design and layout of buildings and streets promote one or more real neighborhoods by facilitating interactions among residents, including diverse gathering places?***
Yes. The developer has done a good job of including many features to promote six real neighborhoods around a town center.

17. ***Have the streets been designed with sidewalks, appropriate lighting, and connectedness, to promote easy and safe walking?***
Yes. The developer has done a good job of promoting a fully walkable community, where important amenities are within a five-minute walk from homes.

18. ***Do the design, layout, and mix of land uses provide a distinctive style and feel to the place, with all elements blending together harmoniously?***
Yes. The developer has done a good job of using "smart growth" approaches to achieve a specified style throughout the community, one that is consistent with the historical character of nearby towns.

19. ***Has the project committed to using older and historic buildings on the original site?***
Yes. The developer has paid considerable attention to retaining and respecting historic buildings and locations, which are very significant for the general area.

20. ***Have the developer and local government agencies used the best techniques to fully engage all categories of local stakeholders in meaningful activities to guide the design of the community?***
No. The methods used very effectively by NCD developers nationwide—such as charrettes, digital visualization technologies, and Visual Preference Surveys—have not been used. Instead, traditional public meetings have been used, where the developer and its team have shaped and dominated presentations. Rather than involve the community directly in the design process, the developer brought its design to the community. The developer's Internet Web site had no information on the project.

21. ***Has the local government adopted zoning codes that give as much support for a mixed-use community as for a typical single-use project (e.g., a sprawl housing subdivision, strip mall or office park)?***
No. The local zoning codes do not support NCD, nor is there evidence that the developer wanted a change in the code that would provide more support for the project. The developer acknowledged that "the project will be a 'planned unit neighborhood development.'" Local officials have admitted that their requirements are typical of ones supporting sprawl, and the developer has acknowledged that some desirable features, such as smaller lot sizes and porches, are not permitted.

22. ***Does the appropriate authorizing or regulatory agency have a process that prevents lengthy and unpredictable delays for developers?***
No. The county's conventional legal process has caused significant delays and uncertainties. The project has gone forward under the planned unit development (PUD) approach. This means that it is being pursued through a variance process for a code that does not explicitly support NCD by right.

23. ***Has the developer made clear how the project may be constructed in different phases over extensive time periods, yet be mixed-use, and is it clear how the original plan will followed?***
No. The developer has acknowledged that some features, such as retail, will not occur until supported by market demand, which may mean 10 years. There is also uncertainty about the construction of multifamily dwellings, because of uncertain market demand. The developer said: "The neighborhood retail and village scale commercial office components of the project will be developed as soon as market demand is present."

24. ***Will impact fees or other measures reduce uncertainties about the ability or willingness of local government to pay for all needed public services and infrastructure?***
No. Unlike three adjacent high-growth counties, this county does not, and legally cannot, impose impact fees, and the issue of high costs for public services and infrastructure for such a large project has been substantial. Some older residents, who have much lower per capita incomes than the people moving in from the metropolitan area, are already being compelled to leave. They cannot afford the rising property taxes and higher home costs stemming from the recent rapid rise in residential development. However, the developer has volunteered to pay an impact fee to support school construction and perhaps other needs. However, financial details have not been presented and no specific, legally binding commitments have apparently been made with government agencies, so uncertainties remain. The developer will donate 75 acres for schools and 10 acres for other public services within the new community, but school construction costs, aside from land costs, are high. Over-crowded schools are already a big local issue.

Conclusions

The project has many features that distinguish it from conventional sprawl places, and several important features that fit the NCD model. However, as the checklist evaluation shows, about half the criteria questions reveal inconsistencies with "smart growth" principles, including some fundamental ones. Should the "smart growth" glass be seen as half empty or half full? One person's sprawl can be another person's "smart growth."

For most people already living in the county, who were attracted to its largely rural character, historic charm, and open spaces, and for local "smart growth" advocates, the glass is seen as half empty. For those who will profit from the project, some local officials who see inevitable residential growth as a regional bedroom area, and potential residents of the proposed community, the glass is seen as half full, and as a positive alternative to the more typical sprawl development already occurring in the county. Thus, this project illustrates the dilemma facing increasing numbers of Americans when developers label projects as "smart growth," compact development, New Urbanism, or similar terms, and how the NGA checklist can help them understand to what extent such projects really are consistent with NCD and "smart growth" principles.

5. The Market for New Community Design: Demand, Incentives, and Barriers

The level of NCD construction in recent years is a miniscule fraction of total housing construction. Yet market analysis shows the problem is not insufficient consumer demand but, rather, extremely little supply. Two factors largely preclude NCD from entering the marketplace. The first is local zoning codes, which favor sprawl. Designers and developers seeking to complete NCD projects must acquire numerous variances from local governments, significantly increasing costs. The second factor is financing. Financial institutions tend to favor sprawl because of its familiarity and lack of complexity. NCDs are perceived to have higher risk and are therefore more difficult to finance.

The barriers to NCDs are just beginning to fall. Some communities are adopting parallel zoning codes that facilitate NCDs, eliminating one of the primary barriers. This helps level the playing field. In addition, some developers are finding creative ways to finance NCDs. This chapter discusses the market demand for NCDs, along with the institutional barriers in place that limit entry of NCD into the marketplace. In addition, this chapter explains innovative methods that states, communities, and industry are using to overcome barriers.

Market Demand for NCD

A March 2001 survey of 1,000 voters nationwide by the National Association of Realtors[49] revealed strong support for many NCD benefits and features.

- For open space preservation, 89 percent supported preserving land being used for farming or agricultural purposes; 88 percent supported preserving natural areas such as forests, wetlands, or deserts; 88 percent supported preserving stream corridors; 83 percent supported preserving true wilderness areas remote from human settlement; and 85 percent supported preserving historic landscapes, such as battlefields.

- For their local areas, 90 percent wanted neighborhood parks they could walk to; 86 percent wanted walking trails, bike paths, and horse trails; and 77 percent wanted town squares or village greens for gatherings.

- On the key issue of adopting zoning laws that allow builders to build homes on smaller lots in return for preserving large amounts of open space in the housing development, 60 percent supported it. As for compact development, 52 percent favored encouraging new homes to be built on small lots grouped together so other land can be saved as open space.

A 1999 survey of San Antonio residents found that 91.2 percent agreed that development should focus on a pattern of traditional neighborhoods, which have a center, a variety of housing types, and retail and recreation within a five-minute walk; 85 percent thought that building high-quality and affordable housing within walking distance of a retail or commercial center and transit stop was important.[50]

Robert Charles Lesser and Company, one of the nation's leading real estate advisory firms, has conducted consumer studies for some NCD-type projects. Studies in Atlanta, Phoenix, Denver, Provo, Albuquerque, Boise, and Chattanooga suggest that 25 percent to 33 percent of respondents would seriously consider buying a home in these settings.[51] Todd Zimmerman, managing director of the market research firm Zimmerman Volk and Associates, said: "I think the average [demand for NCD] is actually something north of 50 percent, but I don't have any statistics to back that up."

A study of four mature NCD projects in California, Maryland, North Carolina, and Tennessee, compared them with nearby suburban housing and found that buyers are willing to pay an average of $20,000 more for homes in NCD communities, although the figure is location-specific.[52] The study controlled for many factors, such as house size, lot size, and age of dwelling. Raw data on sale prices for six NCD places found that, on average, home buyers were willing to pay $67,000 more to reside in NCD places than in typical suburban subdivisions. One financial factor that favors NCD living is that automobile costs can be reduced. But higher prices for NCD homes can also be explained by high consumer demand relative to supply and not necessarily because NCD projects cost more to build, although that may be true in some cases.

In Belmont, a new village in northern Virginia, two small builders were willing to follow specifications such as front porches and alley-served garages. But a large national builder built a standard garage-front product. After 18 months on the market, one small builder sold 30 homes, and the other sold 14 homes. The large national builder sold one home.[53]

A study of 15 diverse NCD-type projects found that home sales increased 34 percent from 1999 to 2000. In the 12 projects where sales were up, the average increase was 47 percent.[54]

One way to assess market demand is by examining the escalation of sales prices over time in NCD-type neighborhoods. High appreciation rates may signal an imbalance in supply and demand, driving up prices for NCD projects. According to New Urban News "it is not unusual for popular New Urbanist projects to experience rapid appreciation, and in many of the selected projects, prices have soared. This is evident even in the most affordable communities."[55] The base price for a single-family home in Park DuValle in Louisville, Kentucky, for example, jumped from $75,000 to $90,000 during 2000. Prices in Seaside, Florida, a development with many NCD characteristics, show dramatic annual appreciation rates. Seven different lot-types appreciated at annual rates ranging from 8.8 percent to 87.3 percent from the mid 1980s to the mid 1990s. The high-end appreciation rate saw a lot sold for $15,000 in 1982 sell for $187,000 in 1995.[56]

A recent study of three NCD communities, each at least three years old, compared them to nearby conventional subdivisions.[57] It found that home appreciation in the NCD places was 16.7 percent, compared to 14.2 percent for the conventional places. Also, buyers in the NCD communities initially paid about 28 percent more on a dollar-per-square-foot basis than did their neighbors in the comparable conventional places. A major builder did the study. The results were explained by the "continued acceptance of the [NCD] concept by the home buying public and the added consumer appeal as these communities mature." An important observation was that the NCD communities were receiving fewer realtor visits than conventional places with comparable locations and price ranges, and even that some realtors actually steered customers away from NCD communities because of a perception that they had poor appreciation potential. This suggests that realtors need to be better informed about NCD.

Consumer Preferences

A 1998 survey for the real estate industry of 440 recent home-buyers in five states (Arizona, California, Colorado, Florida, and Texas) provided important insights.[58] The survey focused on testing the interest in NCD design principles versus conventional sprawl places.

- 72 percent favored neighborhoods clustered around a town center with a village green surrounded by shops, civic buildings, churches, and similar facilities; 29 percent favored having no single community center and having shopping and civic buildings distributed along commercial strips and malls.
- 64 percent preferred a town with less automobile orientation, parking structures instead of large lots, and higher-density development with walking and biking paths to encourage people to get around without a car; 29 percent preferred an automobile-oriented suburb with lots of land used for parking around commercial and public areas, and with places so far apart that driving was necessary, especially for shopping.
- 78 percent favored traditional house styles with garages hidden behind them, front porches to encourage neighborly interactions, and shade trees along the street; 30 percent favored contemporary house styles with yards set back from the street, garages facing the street, no porches, and shade trees only in yards.
- About two-thirds agree that they would rather see neighborhoods grouped into towns, rather than homes marching to the horizon.
- 75 percent want a town with a rich mixture of housing styles and a variety of people and lifestyles.
- 53 percent favor preservation of historic sites and are surprisingly receptive to a little authenticity and local flavor in their communities, in contrast to places that could be plopped down anywhere and look alike.
- 73 percent preferred many smaller parks and green spaces throughout a community, rather than just one, centralized park.

The Local Code Barrier

Zoning codes are typically the purview of local governments. Originating in the industrial age, the purpose of zoning was to isolate polluting industries, separating them from where people live. In the last 50 years, zoning has helped to perpetuate sprawl. Rather than encouraging mixed uses, local zoning ordinances often require strict separation of residential, commercial, and other land uses. Other requirements for residential areas promote isolation and dependence on cars. NCDs require a set of time-consuming, costly variances from local governments. This report has not focused on comprehensive plans and similar tools used by local government, mainly because they generally do not have the force of law that zoning ordinances do. However, it is recognized that comprehensive plans provide a legal foundation for zoning ordinances, which implement to a large degree the goals, objectives and vision expressed in plans. All too often, however, comprehensive plans are ignored or become outdated.

A benefit of the national "smart growth" movement is that some local governments are adopting parallel NCD codes, allowing developers to use either the new code or the old one. It is important to emphasize that local governments should keep the old codes, because a significant part of the marketplace desires conventional development. By adopting the NCD

code, however, local governments help level the playing field. The marketplace will then sort out the success of NCDs without having them prescribed by government. A number of communities have adopted parallel codes, such as Austin, Texas; Belmont, North Carolina; Fort Collins, Colorado; and Portland, Oregon.[59]

The table below lists examples of communities that have adopted NCD-type codes.[60] In addition, Wisconsin is requiring all counties with populations greater than 12,500 to adopt an NCD code by 2002.[61] Wisconsin uses the term "traditional neighborhood development" and defines it as a "compact, mixed use neighborhood where residential, commercial and civic buildings are within close proximity to each other." Its model ordinance requires at least 20 percent of the gross acreage to be open space, at least 25 percent of the open space to be common parkland, and 90 percent of the homes to be within a quarter-mile or five-minute walk from common open space. Minnesota, Maryland, Oregon, Rhode Island, and Utah have developed codes that localities may consider, and New Jersey has created guidance on community planning and design techniques, including town and village centers.[62] Note that zoning "overlays" can be supportive of NCD, because they can supersede the underlying regulation under specific conditions. For example, Barberton, Ohio, adopted an overlay code to support NCD, minimizing the uncertainty of case-by-case review.[63]

Examples of Communities with NCD-Type Codes:[64]

Location	***Status***	***Partial Details or Scope***
Ashland, Oregon	Adopted 1985	Neighborhood center should provide 20 housing units per acre. There is an emphasis on civic space.
Austin, Texas	Adopted 1997	New zoning for developments between 40 acres and 250 acres. Requires a neighborhood center, mixed use, narrow streets in modified grid, alleys, and civic spaces.
Sacramento, California	Approved 1997	Site-specific ordinance for Del Paso Neuveo, a neighborhood to be developed on a blighted, inner-city site.
Boulder, Colorado	Adopted 1997	Covers main street zones and requires pedestrian-friendly and transit-oriented features.
Orlando, Florida	Adopted 1985	Traditional overlay created for historic district, restoring characteristics of 1926 code.
Jefferson County, Kentucky	Approved 1998	Planned village development district ordinance applies to 40-acre to 200-acre projects. Requires open space protection.
Chatham, New York	Adopted 1996	Expanded historic district; fosters two and three stories of residential space above commercial space.
Davidson, North Carolina	Adopted 1995	Ordinance uses four zones: Village Center, Neighborhood Infill, Lakeshore, and Rural Neighborhood; it provides incentives for quality projects.
Fort Collins, Colorado	Adopted 1997	Permits mixed-use districts and street connectivity; requires minimum density of five units per acre.
Calvert County, Maryland	Adopted 1984	Pertains to rural area with town center zones and street plans created for two historic towns and seven unincorporated villages; it promotes mixed uses and connected streets and provides architectural guidelines.
Whitewater Township, Pennsylvania	Adopted 1998	Covers area surrounding unincorporated village zoned for smaller lot sizes; specifies build-to lines and architectural standards.

Huntersville, North Carolina	Adopted 1996	Regulates buildings, requires 15 percent open space, and requires street connectivity.
Manlius, New York	Adopted 1997	The code for town center includes structure siting and architectural requirements.
Port Royal, South Carolina	Adopted 1997	Regulates building types, architecture, street elements, parking, and structure siting.
Washington Township, New Jersey	Approved 1997	Applies to 350-acre section of town; requires interconnected streets and alleys, mixed uses, and architectural elements.
West Chester, Pennsylvania	Adopted 1995	Promotes new development with historic character. Alleys and front porches are required.
West Palm Beach, Florida	Adopted 1997	Regulates building types, building placement, garages, and streetscape. Building type and height replace density.
Loudon County, Virginia	Adopted 1995	Permits rural hamlets and villages instead of conventional subdivisions; requires open space.

Austin's Parallel Code

Austin, Texas, adopted a parallel code to encourage NCD projects. The optional code applies to developments between 40 acres and 250 acres in size. City planners are drafting guidelines for smaller projects to encourage NCD infill. The guidelines recommend a neighborhood with a distance of one-quarter to one-third of a mile from center to edge.[65] The streets are designed to accommodate pedestrians and bicyclists; the neighborhood consists of an interconnected network of local streets. This street pattern provides multiple routes, diffusing automobile traffic and shortening walking distances. The code provides a mix of residences, shops, workplaces, civic uses, and recreation within the neighborhood. A variety of housing is permitted, including single-family homes, duplexes, townhouses, condominiums, and apartments. The neighborhood plan creates open spaces, including a square in the center of town and parks and playgrounds throughout the neighborhood. Important civic buildings are located on prominent sites throughout the project.

Austin is coupling its code with incentives for infill projects. The city's "Smart Growth Matrix" evaluates proposals in terms of their location, mix of uses, consistency with transit, pedestrian access, and other design characteristics.[66] Projects gain points if they are located in certain urban areas or in a "Desired Development Zone" inside the city limits. Projects with high scores may receive cost reductions on infrastructure from 50 percent to 100 percent. As of November 2000, Austin had provided $3 million to four projects, as well as $32 million to large employers who located in designated growth areas.

Albuquerque, New Mexico—Downtown 2010 Program

This is one of the most innovative efforts in the nation. It is very consistent with the NGA criteria for NCD. There are so many striking features of this program that any brief summary cannot do it justice.

- By adhering to the District's Plan and Uses, and the Building Types and Standards, and preparing complete project documents, a proposed project will be reviewed and approved within 21 to 24 working days.[67]
- There is a simple four-step process for building in the area, which is followed by an expedited site-development plan approval process.
- The goal of the process is "to ensure that building development is predictable and real estate values are stable."
- Standards include simple photographs of what is and is not acceptable, together with brief text.

- One goal is to make the downtown area a pedestrian-first, park-once place with excellent transit and bicycle facilities.
- The program is committed to preserving and enhancing the character of the neighborhoods that surround the area.
- High-density urban housing is promoted, with a variety of housing types (e.g., townhouses, urban apartments, lofts, condominiums, and live-work).
- The program creates new parks, open space, and plazas that are easily accessible to downtown residents and others.
- The whole approach is to develop the area as if it were a single mixed-use project.

State Strategies—Envision Utah's Model Codes

To accompany its *Urban Planning Tools for Quality Growth*, Envision Utah produced model codes for quality growth.[68] The model codes address environmentally sensitive areas; performance standard subdivisions; site design standards; walkable neighborhoods; and center and-use standards. Local governments can use these model codes to revise planning and zoning ordinances. These codes provide recommendations. Local governments are not required to adopt the alternative framework. Along with the codes, Envision Utah published technical land-use analysis methods that local governments can use to evaluate sensitive lands and housing capacity through infill and reuse. Envision Utah presented this important view of zoning codes:[69]

> Our recommendation is that each community look at the overall effects of its zoning code and adjust regulations to meet the needs of both those who already live there and those who would live there if appropriate housing choices existed. In addition to providing a better fit between housing supply and demand, this strategy can be used to achieve a walkable community—one that provides a more coherent and efficient community that discourages sprawl and better conserves our resources, agriculture and open spaces.
>
> Changes to zoning alone are not sufficient to remove the disparity between housing need and supply, but they remove obstacles to solving this problem that have been created by the public sector. Our recommendations don't seek to make zoning more restrictive, but instead outline tools to make zoning more flexible and responsive to market forces."

New Jersey's "Smart" Building Rehabilitation Code

As Governor of New Jersey, Christine Todd Whitman signed into law the country's first statewide building rehabilitation code. She noted: "New Jersey's rehab code is the nation's first set of rules written just for older buildings, and it's bringing developers back to cities by providing sensible standards and predictable costs for renovations. It's part of a whole tool kit of resources we're using to revitalize New Jersey's urban areas."[70]

Has it worked? Rehabilitation work in New Jersey's five largest cities increased by 60 percent in 1998, the first year the code was in effect. In 1997, the year before the code's implementation, rehabilitation work in those cities increased a mere 1.6 percent. In 1999, because of its code, New Jersey was awarded the Innovations in American Government Award, recognized as one of the most prestigious public service awards in the country.

The Financing Barrier

Developers almost always find it difficult to finance NCD projects. The mixed-use backbone of NCD projects is a stumbling block. The Wharton School at the University of Pennsylvania researched whether lending and investment practices make it especially difficult for New Urbanism developments, which share many NCD characteristics, to obtain financing. Wharton conducted a survey of 23 developers, financiers, and investors, finding that "the real onerousness of the financing environment for NU developers arises from the higher perceived risk associated with multiple-use projects in general and with the newness of the NU concept in particular."[71]

Mixed-use development is problematic because real estate investors generally place project proposals into rigid, single-use categories. Christopher Leinberger, a NCD developer, explains that development projects are placed into one of 19 categories, most of which are narrowly focused on one particular type of development, such as apartment buildings, strip retail, or office parks. [72] Survey results suggest that "some lenders are prepared to finance a multiple-use project in its entirety . . . however, most of the lenders and investors interviewed noted that their policy was to categorize each property type separately, evaluating the overall project as a weighted average of the individual property types. One reason they did so was because they viewed their collateral as component parts of the project that could be sold off separately in the event of a default or foreclosure."[73]

The Wharton research also found that real estate lenders believe urban infill NCD projects are less risky than suburban and greenfields NCD projects, although the risk is still higher than conventional single-use projects. The higher densities, established markets, and familiarity of mixed-use development in urban areas are the reasons proposed NCD projects are more easily evaluated and approved by lenders. Moreover, urban officials usually support new development to increase the local tax base. Gentrification and affordable housing issues, however, are becoming increasingly important and can sometimes block community support for a project.

NCD projects in existing suburbs are perceived as having greater risk, mainly because lenders and investors are skeptical about the willingness of these communities to accept higher density development. In addition, NCDs in greenfield locations were considered very risky investments. The research explains "in this case the lender/investor community was adamant that suburban greenfield sites were much riskier—so much so that many would not even consider investing in them. The difficulties of dealing with large up-front infrastructure costs and with making large-scale retail work in projects without an established population base were mentioned repeatedly."[74]

Higher perceived risk causes financiers to use higher discount rates, devaluing longer-term profits. Unless the project can generate significant returns in the near-term, it will not be perceived as financially viable. This is a problem for NCD projects, which typically require longer periods (e.g., 7-15 years) than standard sprawl development to maximize returns. Wharton points out "since the gestation period of large NU projects is mid- or long-term, that almost certainly is why many capital market participants will not finance them or will finance them only if assured that carefully planned phasing of the development will generate cash early in the project's life."[75] Some developers are successfully using this phased approach to NCD development, first constructing housing and phasing in other components such as retail later after establishing a nearby market and record of success.

Time: The Need for Patient Investors

This "gestation" period needed to create vibrant NCDs relies on investors willing to receive the bulk of their returns in the mid- to long-term. Leinberger explains that different investors need returns at various times after initial investments. Some investors are comfortable only with short-term investments. Others are comfortable with both short- and mid-term investment returns. A smaller number is comfortable with long-term approaches. Most real estate investors, however, use discounting methods that focus on short-term returns. As stated by Leinberger, "the irony is that, although consumers have an unbelievable amount of choices in supermarkets, real estate investors have only one type of financial returns—short-term cash flows that must be constantly reinvested. There are many investors who would prefer mid- to long-term investments that can gain substantial value due to intrinsic variables, such as quality construction, location, and emotional importance to consumers due to the architecture. The financial underwriting of conventional development implies that investors must accept a 'one size fits all' short-term logic since discount cash flow ignores mid- and long-term returns."[76] Thus, the short-term methods used by most real estate investors tend to discourage the development of mixed-use NCDs.

Moving Past the Financial Barrier

Leinberger offers a number of ways to break down the financing barrier. First, market analysts must determine the life cycle returns of conventional development projects and NCDs to compare and contrast total returns. A clear and fair comparison would provide investors more confidence in the financial integrity of NCD projects. It is also important to expand or revise the 19 standard product types to include mixed uses. Financial instruments are handled like commodities and, therefore, mortgages and notes for NCD projects must become standardized to allow them to be easily traded and sold.

Perhaps most important is the need to educate mid- and long-term investors that conventional discounting methods of evaluating real estate opportunities are not appropriate for all of their investments. Private investors, pension funds, insurance companies, and municipalities could all consider dedicating a larger portion of their real estate portfolios to mid- or long-term investments.

Another approach is better matching investors with appropriate rates of return. Short-term investors who want to get in and out within five years can receive the majority of cash flow during the first five years. These investors are construction lenders that are not as likely to value the mid- to long-term cash flows as much as the assurance of getting their return back within five years. Investors with a mid-term focus could receive their returns after short-term investors; in Leinberger's example, these investors receive 70 percent of the cash flows between years 6 through 12. They are willing to trade off financial returns in the early years for a large share of the mid-term returns. Long-term investors will receive the bulk of their returns after year 12. Foundations, cities, and states are likely long-term investors; they are more willing to wait for returns generated by encouraging quality growth and economic revitalization. Collectively, pension fund managers are the largest single category of real estate investors. State pension funds are a significant potential source of NCD investment. In addition, many of the country's largest foundations focus on quality growth issues. By bridging the gap between the money making side and the programmatic side, foundations can make NCD investments from their asset bases. In essence, the foundations can advance their agendas while earning superior mid- to long-term returns.

Innovative Approaches—Foundation Dollars Underwrite an NCD Project in Albuquerque

Like many urban areas, downtown Albuquerque has struggled in the last decade; there are few residences, office vacancy is the highest in the metropolitan area, the retail sector is nearly nonexistent, and no private-sector building had been permitted in over 15 years.[77] The focus of redevelopment is a six-block district, formerly surface parking lots owned by the city. The Downtown 2010 Program described earlier is the key to success.

Arcadia Land Company recognized that a minimum of three to five years would be necessary to achieve the critical mass required to make the downtown viable. Most conventional financiers balk at this timeline. The McCune Charitable Foundation, the largest in New Mexico and with "smart growth" as part of its mission, agreed to invest $6 million of equity in the project. Arcadia and McCune thus formed the Historic District Improvement Company (HDIC). The foundation was willing to be a patient investor. The development is poised to prove very successful in a few years. This innovative approach, perhaps the first of its kind in the country, may be a mechanism that companies, foundations, and localities can use to complete future NCD projects.

Industry Structure

Another factor is that conventional project developers and production builders generally have expertise in single-use projects and, naturally, tend to keep doing what has already worked for them. Except for those developers doing NCD projects, the industry is often seen as "producer-driven," in contrast to a "consumer-driven" model that other industries have reengineered themselves into. In some important respects, developers and builders have reaped benefits from being able to offer products at prices that to some degree have been subsidized, because new infrastructure costs have been imposed on the larger tax base of a jurisdiction. And, in the case of single-use housing subdivisions, it is not necessarily true that increased tax revenues offset the high infrastructure costs. Many developers are also not prepared, or able, to handle the higher up-front costs needed for NCDs' more intensive planning and design activities. Another factor is the cyclical nature of the real estate industry, which has tended to cause developers to focus on short-term returns.

The financial community is also prone to support projects it is most familiar with. The realtors are in the same situation and, for the most part, seem resistant to "smart growth" efforts. Then too, the many components of the automobile and road construction industries may have apprehensions about NCD because of its potential to reduce vehicle use. Similarly, many franchise businesses may have anxiety over NCD, because it crystallizes public discontent with look-alike retailers in strip malls and roadside areas that provide a sprawl-look sameness across the nation. With NCD, these companies will benefit from blending in with local architecture and community tastes, as well as a smaller scale for neighborhood locations.

> "Suburbia is not a place, but a world view. It draws developers and investors who prefer comparatively unregulated projects. (Who can blame them?) It is a mind-set also shared by unquestioning bureaucrats, engineers, planners, and even architects…One suspects that these specialists are out of sync with what people actually want. There is an obvious contradiction between the products being sold and the words and images that are used in sales literature evoking community…Real estate ads peddle 'That Hometown Feeling,' yet the actual thing being sold…isn't Hometown at all but another Stamped-Out Subdivision."[78]

6. State Policies to Support New Community Development

The barriers to NCD are beginning to fall, but slowly. NCD is poised to assume a dominant role in future growth nationwide and improve national land use and development patterns. NCD tests the willingness of government to support the best private-sector efforts that look beyond short-term profits to more innovative ways of satisfying consumer demand. Five approaches can be used by governors and states to help the market perform more fairly and effectively to support NCD.

Develop Public Support

Governors can help the public understand the full range of NCD benefits, including more housing choices for people. Many governors have initiated growth-management strategies, including creating executive orders, supporting legislation, establishing task forces, and reaching out to the public for input about growth issues. Most efforts have focused on defining growth issues and impacts. Now the emphasis is shifting to delivering solutions to the public, solutions that address quality-of-life concerns. The new opportunity is to make NCD an explicit component of state growth-management strategies and of visions for how people want their state and community to grow. *NCD addresses all growth problems being encountered in states*. It gives governors the opportunity to focus on their high priority programs, such as urban revitalization, open space preservation, farmland preservation, maintenance of historic neighborhoods, infrastructure investment and improvement, and protection of natural habitats for wildlife and recreational opportunities. States can align support for NCDs with their existing programs.

Best Practices for Providing and Receiving Information

Informing the public about NCD options and benefits is best integrated with obtaining feedback from the public about their community preferences and needs. The use by Envision Utah of newspaper ads that presented different growth scenarios and a survey form that citizens could submit to express their preferences greatly increased the number of participants (17,500), compared to just holding community meetings. Another new approach is the creation of design centers. These are special places where citizens can go, at their convenience, to interact with various digital visualization technology tools that present data and design options for improving communities through NCD. Chattanooga, Tennessee; Saint Paul, Minnesota; and Lexington, Kentucky, have design centers. Such places can build databases on citizen preferences, educate children, inform the business community, and present opportunities for featuring successful state NCD projects. Public meetings will always remain necessary, but the "talking head" style, where developers come in with designs that they have created on their own, is being replaced by the latest interactive digital technologies that provide community design information and options, get preferences of citizens, and help shape conceptual designs for projects.

Praise High-Quality NCD

By identifying outstanding performance and rewarding it, governors can help bridge the gap between NCD demand and supply. Using the NGA checklist to assess projects in their states, and recognizing that the most worthy projects warrant news coverage to stimulate public recognition and interest, governors could give awards to outstanding projects by developers or builders. This would help stimulate developers to increase supply to meet public demand for NCD, and also help make NCD projects more attractive to lenders and investors.

Oregon's Livability Awards

Governors can encourage development designs that are consistent with quality growth strategies by publicly recognizing high-quality projects. Each year, Governor John A. Kitzhaber presents Livability Awards to recognize exemplary development projects that reinforce transportation and land-use goals.[79] The awards are given to projects that meet a set of criteria. In particular, projects:

- incorporate or encourage a mix of uses to stimulate economic vitality in existing and emerging downtowns, neighborhood commercial districts, and other mixed-use centers;
- are designed to be safe, pleasant, and convenient for pedestrians, bicyclists, and riders of public transportation, providing direct routes to housing, employment, a wide range of commercial services, parks, schools, and public transportation;
- are compatible with community environmental concerns, including energy efficiency and natural resources; reusing existing sites, buildings, and materials when possible;
- promote the importance of public values by providing a balance of jobs and affordable housing, creating community gathering places and employing regional or local historic and cultural heritage; and
- encourage a community sense of place through locally appropriate, human-scale design.

The Envision Utah Governor's Quality Growth Awards

The Envision Utah Governor's Quality Growth Awards recognize exemplary development projects and creative communities. The awards honor development that supports both the Envision Utah *Quality Growth Strategy* and the state's goals to provide cost-effective infrastructure, improved air quality, housing affordability, and economic growth. Recipients of the Quality Growth Award receive a plaque presented by the Governor or the Envision Utah chair, and press coverage highlighting the community's implementation of quality growth principles. The selection committee includes representatives from the Governor's Office, Urban Land Institute, Utah Association of Realtors, Utah Chapter of American Institute of Architects, Utah Chapter of the American Planning Association, Utah Home Builders Association, and Utah League of Cities and Towns.

Assist Local Governments

NCD is merely one part of a larger growth strategy. Many states are working with local governments to develop and implement growth-management efforts. A number of states have adopted policies to encourage improved local and regional planning. Now the opportunity is to focus on removing obstacles to NCD, to capture more benefits for communities. Most local governments now use zoning codes that support housing subdivisions and other single-use development, rather than NCD. States can help local governments see what a number of cities have already discovered: codes can be improved to support NCD by the private sector. *This is a textbook example of the need for public policy to level a regulatory playing field.* Several states, including Maryland, Minnesota, Oregon, Rhode Island, and Utah, have developed model codes for local governments to consider using or adapting.

States can also provide financial and technical assistance to local governments for modernizing their codes, and they can pay special attention to helping neighboring local governments coordinate their planning and zoning actions. Massachusetts Governor Jane Swift, through an

executive order, made available $30,000 for each city and town for technical assistance to reexamine their zoning and explore new approaches to planning. Another option that merits serious consideration is having a code that grants any NCD-type permit application priority in processing over all other types of applications, including those with prior filing dates. States can also attempt to help local governments provide more affordable housing. The Envision Utah model code gives developers density bonuses for including affordable housing, a concept used successfully by Montgomery County, Maryland.

States can also help local governments support NCD through investments in transportation, water resources, and other public goods, which often are best viewed from a regional perspective. NCD makes those investments more cost-effective. Public transit is a particularly important facet of NCD. Individual greenfields NCD projects are likely to be too small to support public transit in the short term. However, infill NCD projects in urban areas and older suburbs can increase use of public transit and reduce the traffic congestion that plagues communities nationwide. Integrating local support for NCD with state transportation planning and spending offers many opportunities for supporting NCD projects.

Wisconsin's NCD Code

In 1999, Wisconsin passed a law that will encourage local governments to consider development alternatives. The law directed the University of Wisconsin to develop model ordinances for NCDs; a draft ordinance was reviewed by the Wisconsin legislature in early 2001.[80] Local governments with a population over 12,500 are required to adopt the final ordinance by 2002, but they are not required to approve NCD development proposals. It is hoped that smaller communities will adopt the codes voluntarily, once they see how the guidelines work in neighboring jurisdictions.

Rhode Island's South County Watersheds Technical Planning Assistance Project and "South County Design Manual"

This effort is one of the most impressive state efforts in providing citizens and local governments with excellent information, analyses, tools, examples, and model ordinances to support smart growth-type development, particularly in more rural areas.[81] Although the project, which was funded by the U.S. Environmental Protection Agency, was done for one Rhode Island county, the results are applicable to the whole state and most other places as well. The manual noted that:

"Zoning based on the laudable goal of making development safe and predictable has the unintended consequence of reducing every landscape to the lowest common denominator, and favors developers who bring in simple cookie cuter subdivisions with wide, flat roads…corporate America and government at all levels have spent the last 50 years building highways and suburbs, and more suburbs and highways—draining the vitality from city centers and forcing a dependence on the automobile. Today many people can't get to work, shopping, schools, or recreation without cars…Driven by the market place, and subsidized by trillions of dollars in public investment in highways, suburban development became a self-replicating machine…In most towns, zoning and other regulations make it impossible to build anything other than the conventional plans, at least by right…**Like any movement designed to gather many smaller efforts into a single theme, Smart Growth has sometimes been misused by those trying to merely give sprawl a more acceptable face**." *[emphasis added.]*

Key elements of the Rhode Island effort include:

- Development of a set of model land use ordinances, including the means for towns to more effectively plan for growth, and alternatives to the usual forms of residential clustering and planned commercial districts that have failed towns in the past. The model ordinances promote the idea of several different kinds of flexible and planned district development to be applied depending on the specific context of a project site. The models provide two different options for mixed-use commercial development in planned development districts, depending on whether the site is in the countryside or close to an existing village or town.
- The project also provided support for using transfer of development rights as a tool to preserve farmland and open space.
- A Rapid Site Assessment Guide was prepared to help towns evaluate the suitability of sites for development. It uses data available from the Rhode Island Geographic Information System to help planners, developers, and town boards to evaluate possible environmental impacts very early in the development review process, before money is wasted on site surveys and engineering.
- The *South County Design Manual* stresses that applying smart growth principles requires a design process that respects and builds upon the characteristics and context of each unique site. It emphasizes a planning and design process that moves from a focus on the isolated home or business towards design of the whole neighborhood or community. Five planning goals were used: water quality; village centers surrounded by open space; healthy economy; diversified housing choices; and safe, efficient transportation. Most importantly, the manual recognized that NCD-type development can still fail if not guided by an integrated program of town and regional planning. "A number of award winning 'New Urbanist' projects have been completed, for example, that are lovely within themselves, but on the regional scale represent just another form of sprawl."
- While supporting mixed-use development, the project found the need to be linked to a larger planning process that uses flexibility in locating and designing new development to preserve key resources and make communities that work better. "In the absence of this larger planning context, mixed-use projects can become nothing more than a souped-up version of a shopping mall; very nice once you get there, but still cut off from the larger community."
- Eight design scenarios were used to illustrate how actual places could be developed following current zoning and other regulations, or alternatively how the same or a greater amount of development could be accommodated by following NCD-type concepts. The eight scenarios were: rural district, historic town center, large forested tract with rail access, town gateway district, mature commercial district, agricultural district, the growing commercial corridor, and the mill village.

Maryland's Smart Neighborhoods

In March 2001, the Maryland Department of Planning released a draft models and guidelines document to support "revitalization of older communities and new compact, mixed-use communities in locally designated growth areas as an alternative to continued sprawl."[82] The report acknowledged that "developers proposing smart neighborhood projects often face a number of impediments, including those created by land development regulations." The report presented sample code language that local governments could use to better support "smart" neighborhoods. Local jurisdictions were encouraged to develop their own codes that "cultivate the diverse and unique history, architecture, geography, and people of their communities."

Prompted by continuing rapid sprawl development on greenfields sites, Maryland Governor Parris N. Glendening announced in May 2001 that the state was prepared to employ a little-used 1974 statute that allows the state to intervene in local zoning decisions.[83] State officials can become involved in lobbying for or against projects. The state can also file lawsuits to contest zoning decisions. The state's intentions could stimulate interest by local governments in adopting the model code or some variation of it to better support infill NCD projects.

Utah's Planning Grants

The Utah Quality Growth Commission allocates planning grants to local governments throughout Utah. These grants provide vital resources for communities to plan for quality growth that, as described by Envision Utah, is consistent with NCD. Any Utah town, city, or county is eligible to apply. The grants are awarded annually and require a 50-percent match. Past grant recipients have conducted quality growth surveys and have completed downtown revitalization plans, open space plans, urban design standards, and various other planning projects.

Reduce Government Support for Sprawl Development

Another thing is needed to balance development opportunities so that NCD can fairly compete with conventional sprawl and other single-use projects. Considerable government spending now supports land-intensive sprawl and its high infrastructure costs. States can reduce support for sprawl by targeting spending in infill and designated growth areas. In addition, states and communities can make greater use of impact fees (also known as development fees, mitigation fees, and system development charges, and sometimes designated for specific uses, such as schools or roads) to recover the true costs of providing infrastructure and public services to developments. The idea is straightforward. All development projects should pay impact fees. Development farther away from existing infrastructure should pay higher costs to receive a full complement of roads, schools, water and sewer service, and other public services, rather than burdening the broader tax base. Higher taxes to supply public services for new development often force long-term residents to relocate. *Reducing subsidies for sprawl development levels the playing field, allowing NCD to compete because it offers lower infrastructure costs on a per capita or per dwelling basis.* The argument that the public should subsidize new development because of benefits provided to all citizens is weak. Fair impact fees promote a fair market. Why should normal market-priced housing be subsidized? If fair impact fees lead to less greenfields development, smaller houses and lot sizes, and more use of land in developed areas with infrastructure, then they serve the public interest.

Research on the role of property taxation on urban sprawl concluded that: "the property tax makes urban development appear artificially cheap. Excessive development then occurs, with city populations and land areas expanding beyond socially desirable levels. An impact-fee regime, under which developers are charged the marginal infrastructure cost associated with their developments, would tend to correct this overexpansion."[84] Other research found that impacts fees have "little effect on new construction," and noted: "this finding is consistent with the comments of builders, who complain that the uncertainty surrounding the permit and zoning approvals process creates greater problems than predictable costs associated with fees."[85]

Conservatives Support Impact Fees

"Developers should pay for the infrastructure for which they are directly responsible, but they should not be forced to pay extra simply because people who already live there can force costs on newcomers in the form of additional new taxes…Taxpayer subsidies for development are not appropriate. The owner of a new development or subdivision should pay the cost of extending infrastructure to the new residences. This may be done through direct payment by the developer or by full-cost pricing of infrastructure. In the latter case, the city or town charges the developer for the entire cost of the investment (including debt service) that is attributable to the new homes." — Jane S. Shaw, "Sprawl and Smart Growth," The Political Economy Research Center, 2001.

Not all states have enacted laws that give local governments the ability to use impact fees. But in the 39 states with such laws, state agencies can work with the public, business, and local governments to use impact fees more widely, effectively, and equitably.[86] States without such laws should consider one. State groups formed by governors to address growth issues could focus explicitly on how new or improved impact fees could produce benefits. Five findings about Washington state's experience with impact fees[87] make sense for all locations.

- Impact fees encourage development predictability.
- Impact fees encourage free-market principles.
- Impact fees help abate tax increases while maintaining public services.
- Impact fees benefit taxpayers, home buyers, and private developers.
- Impact fees promote sustainable economic development.

Delaware Governor Ruth Ann Minner on Her Livable Delaware Initiative

"Let's think about the concept of 'livable,' or 'livability.' We can probably all reach back into our past and remember when we could walk or ride our bikes almost anywhere—to school, the store, the ballpark or our favorite fishing hole. We didn't need mom or dad to load us into the minivan and drive us to every function in our daily lives. We had never heard of 'gridlock' ... there were more fields of green than of gray asphalt ... and 'sprawl' wasn't such an ugly word."[88]

Governor Minner proposed legislation on graduated impact fees: "The state should not be subsidizing sprawl. If you're developing in a pre-determined growth zone, you won't pay any impact fees. We want to focus development in and around existing communities. But we want to discourage development in rural areas, and we will do that with impact fees. Why should state taxpayers subsidize sprawl—especially as our revenue growth is slowing down? A stand-alone residential development doesn't pay for itself—it costs government $1.15 in services for every dollar it generates in tax revenue." The Delaware legislature passed this bill in July 2001.

Address the Financing Barrier

Money matters. Governors and their appropriate cabinet members could work with leaders of state financial institutions, developers and builders, business associations, and public interest

organizations to develop more effective public-private partnerships that promote and finance NCD projects. Recognizing the difficulty in financing NCDs, governors could recommend that state pension funds consider financing such projects, particularly when they help revitalize older urban or suburban communities. This would add much-needed equity support for projects, and states could expect a sizable return in the longer term.

California's Support for Sustainable Communities

State Treasurer Philip Angelides has been an advocate of steering financial help to sustainable development, which he defined as, "Land uses that support transportation options beyond more freeways and roads. It means a better mix of housing in communities and neighborhoods. It means locating jobs near housing and balancing job growth with new housing, communities centered around civic spaces, and well-planned higher density use of land."[89]

This matches NCD. In September 2000, he noted that more than $7 billion in public funds over the next three years would be redirected in pursuit of the "smart investment" goals of community reinvestment and sustainable growth. He noted that the state rewards projects "within walking distance of transit, schools, parks and shopping."[90]

He has also noted what the California Public Employees' Retirement System (CalPERS) and the California State Teachers' Retirement System (CalSTRS), which together have $270 billion in capital invested globally, are doing in this area: "In the last year, those [pension] funds have committed $1 billion in new capital investment for urban, in-fill development—from mixed use to office to commercial to housing—targeted to California communities. These investments are designed to bring the funds market returns as we support "smart growth" with our State's investment capital."[91]

On another front, the California Tax Credit Allocation Committee, which annually awards $450 million in federal and state tax credits to finance the construction and rehabilitation of affordable housing, adopted a new program direction—scoring applications for tax credits in a way that supports sustainable growth. Housing developments are given points for being close to transit, parks and recreational facilities, and retail grocery shopping. Apartments for families are given points if they are located within walking distance of a public school, and 100 percent of the projects funded received points for meeting the sustainable development goals.

Minnesota's Opportunity Sites

Six sites within the Twin Cities metropolitan area have been chosen to become models of livable, walkable communities.[92] Late last year, Governor Jesse Ventura announced six "opportunity sites" to receive intensive planning and design assistance from the Metropolitan Council and Calthorpe Associates. With funds provided from the McKnight Foundation, the neighborhoods will be transformed into mixed-use, transportation-oriented communities. Two of the sites are greenfields, three are older established suburbs, and one is located in the urban core. All have the potential to be integrated with adjacent development and to positively affect future development patterns in surrounding areas. Elected officials, businesses, and local residents will work together to design project sites through open forums, workshops, interactive Web sites, and visual preference surveys.

Coordinate State Support for NCD

Governors could direct state agencies to support NCD projects, especially urban and suburban infill projects. This can be done by expediting permitting; giving preferences for state financial assistance from existing programs, such as brownfields and main street programs; and targeting

state capital spending on projects that enhance NCD projects or locations for them. State agencies could also be directed to work together to develop and disseminate information about NCD attributes and benefits.

Governors could ask their state cabinet group, commission, task force, or advisory group handling growth-management and land-use issues to examine ways to remove state and local government obstacles facing private sector developers and builders interested in creating NCD projects. Recognizing that some ways to encourage more NCD projects require legislative action, governors could develop bills for consideration by appropriate legislative committees. For example, requiring attention to and encouragement of such projects could refine state land-use planning statutes.

Oregon's Quality Communities

In August 2000, Governor John A. Kitzhaber, M.D., signed an executive order on the use of state resources to encourage the development of quality communities. The order directs state agencies to review their programs and find ways to invest in smarter growth. The order has seven goals.

1. Promote compact development within urban growth boundaries to minimize the costs of providing public services and infrastructure and to protect resource land outside urban growth boundaries.
2. Give priority to a quality mix of development that addresses the economic and community goals of a community and region.
3. Encourage mixed-use, energy-efficient development designed to encourage walking, biking, and transit use.
4. Support development that is compatible with a community's ability to provide adequate public facilities and services.
5. Facilitate development that is compatible with community and regional environmental concerns and available natural resources (e.g., available water and air quality).
6. Support development that provides for a balance of jobs and affordable housing within a community to reduce the need to commute long distances between home and work, thereby minimizing personal commuting costs as well as the public and societal costs of expanding the transportation infrastructure.
7. Promote sustainable local and regional economies in order to provide jobs for residents and financial support for community services.

New Jersey's Multi-agency Partnership for Transit Villages

The state's Departments of Transportation, Transit, and Environmental Protection—together with the Economic Development Authority, the Redevelopment Authority, the State Council on the Arts, and the Commerce and Economic Commissioner—form a partnership to advance transit-village communities.

New Jersey Supports Incentives for NCD with Employment Centers

Facing an expanding business sector and little open land, New Jersey is advocating new mixed-use centers with large employment components. The goal is the design of complete, walkable communities with discrete neighborhoods, schools, a town center, and diverse housing, retail, and recreational amenities. The state concluded that in spite of numerous benefits, "there is little reason presently for the development industry to change its current prototypes and practices."[93] Also, corporate leadership "has not favored mixed-use places." The answer? "This situation can only be overcome through public-private partnerships which level the playing field,

redress the balance between the two models of land development [i.e., single-use versus mixed-use] and provide a consistent and convincing front of public incentives."

Possible state initiatives to support NCD projects include streamlining and simplifying state agency permitting; exploiting opportunities in existing programs for providing financial incentives; educating the financing industry and the public about the advantages of NCD; creating demonstration projects on state-owned land; and helping to assemble parcels of land for projects.

7. Conclusion

NCD is a powerful way to promote housing availability and a style of growth that enhances quality of life and place. It also tests the willingness of government to support the best private-sector efforts that look beyond short-term profits to more innovative ways of satisfying consumer demand. NCD does not appeal to everyone. It does not have to. Millions of Americans who do prefer NCDs deserve to have more choice in the market. There is no one "right" American dream. For many people it has been, and will remain, a single-family house in a safe suburb on a large lot with lots of privacy. For other Americans, however, it is a real neighborhood in a mixed-use community with NCD features.

When NCD becomes available, it is a commercial and social success. But innovative developers and builders, as well as real estate investors and lenders, need more equal development opportunities, in terms of government policies and regulations, if they are to profitably pursue NCD projects. The evidence is in. Enough Americans prefer NCD communities to make it a market success. Support by government for NCD is in the public's interest. The current widespread bias in favor of sprawl development needs to be balanced by support for NCD. More flexible zoning, fair impact fees, and smarter rehabilitation building codes can make markets operate more effectively and equitably and give Americans the choices they want.

APPENDIX
Discussion of NCD Evaluation Criteria

The National Governors Association's Principles of Better Land Use provide a useful framework to discuss the key components of NCD.[94] The principles are the same as the "smart growth" principles disseminated by the Smart Growth Network.[95] They have been divided into two categories: fundamental goals and community goals. Fundamental goals are more concrete; they consider where NCD should be found on the landscape and the intricacies of transportation and design. They can be used with early and limited information on a project. Community goals consider process-related issues and the qualities that NCDs help foster. They are more difficult to assess before a project is well underway. Each of the land-use principles is listed below, with criteria for evaluating NCD projects, followed by a discussion of each of them. Importantly, many of the principles interact with each other to make vibrant NCD places.

The criteria serve as a tool that can help people and government agencies more accurately assess whether projects are authentic NCDs or "knock-offs" created by developers and builders trying to capitalize on the growing disenchantment with typical sprawl places, without, however, fundamentally changing their products. Confusion in the marketplace undermines the NCD movement.

***NGA Principles of Better Land Use:* FUNDAMENTAL GOALS**	***Criteria for Evaluating Consistency of New Community Designs with "Smart Growth" Objectives***
1. Strengthen and encourage growth in existing communities	The preferred locations are areas with existing infrastructure—such as urban centers, older suburbs, and small towns—that have experienced substantial declines. Infill projects, reuse of brownfields sites, and conversion of dead malls have priority over greenfields sites.
2. Include mixed land uses	Mixed-use projects must include residential housing; significant employment opportunities from office space or light industrial facilities; retail shopping; and outdoor recreation and public spaces. Larger projects should also include schools and entertainment facilities.
3. Create a range of housing opportunities and choices	Residential housing should be mixed-income and offer a range of single-family and multiple-household units, with special attention to affordable housing needs of the community.
4. Preserve open space, farmland, natural beauty, and critical environmental areas	Direct Land Use: The location of the project should not unnecessarily consume working lands, including farms, ranches, and private forestland, or unique environmental areas. The project should not contribute to fragmentation of green spaces. Compact design should minimize the amount of land consumed on a per capita and per dwelling basis, and interior community green spaces should be designed for multiple uses, such as parks, sports fields, walking, biking, greenways, and water sports. Indirect Land Use: The project's impact on use of land for infrastructure, such as roads and utilities, as well as offsite energy production, for example, is relevant. Energy-efficient design and "green" construction approaches, such as use of recycled materials for construction, that are viewed in terms of sustainable design are consistent with "smart growth."

5. Provide a variety of transportation choices	Transit-friendly design prefers locations with easy access to mass transit and, for larger projects, includes local public transit. Community layout should facilitate walking and biking over automobile use for noncommuter trips. Automobile traffic should be facilitated by connected street patterns providing multiple routes. Telecommuting should be encouraged through broad-band connections for dwellings.
6. Foster "walkable," close-knit neighborhoods	Pedestrian-friendly design employs mixed uses, locations of key amenities, and streets with sidewalks to promote safe walking for residents and workers. True neighborhoods are fostered by designs and layouts that promote interactions among residents. Through streets are preferred over cul-de-sacs.

***NGA Principles of Better Land Use:* COMMUNITY GOALS**	***Criteria for Evaluating Consistency of New Community Designs with "Smart Growth" Objectives***
7. Take advantage of existing community assets	New projects should benefit from surrounding community features, such as transit facilities, green spaces for recreation, schools, shopping, and cultural amenities. Local abandoned and brownfields sites should be seen as opportunities for land recycling.
8. Promote distinctive, attractive communities with a strong sense of place, including the rehabilitation and use of historic buildings	Whenever historic and older buildings, particularly schools, are present at the site, their rehabilitation and reuse should be part of the new design. Architectural criteria and community layout, including location of public buildings and spaces, should be used to encourage interactions among residents, facilitate safe street life, and maximize a strong sense of local community in harmony with the natural setting.
9. Encourage citizen and stakeholder participation in development decisions	The process used to locate a new project, develop the best design, and gain public acceptance for it should include opportunities for active participation by all local stakeholders, with particular sensitivity to any possible displacement of existing residents and businesses at or near the location.
10. Make development decisions predictable, fair, and cost-effective	Local governments with zoning code responsibilities should facilitate innovative community designs consistent with "smart growth" principles, and they should not impose obstacles and delays that place such designs at a competitive disadvantage to more common "sprawl" and single-use projects, particularly on greenfields sites. Developers should present realistic plans for construction of different phases over time and assurances that build-out and future development will be consistent with the original vision accepted by the community.

1. Strengthen and Encourage Growth in Existing Communities

***NCD Criteria**: The preferred locations are areas with existing infrastructure—such as urban centers, older suburbs, and small towns—that have experienced substantial declines. Infill projects, reuse of brownfields sites, and conversion of dead malls have priority over greenfields sites.*

Lenders and Location

Researchers at the Wharton School at the University of Pennsylvania surveyed industry practitioners to understand the hurdles for NCD projects.[96] They found that real estate lenders believe that urban infill NCD projects pose the most acceptable risks, although those risks are still higher than conventional single-use projects. Higher densities and established markets for mixed-use development make these projects more easily evaluated and approved by lenders. Moreover, urban officials usually support new development to increase the local tax base. Gentrification and affordable housing issues, however, are becoming increasingly important and can sometimes block community support for a project. NCD projects in existing suburbs are perceived as having greater risk, mainly because lenders and investors are skeptical about the willingness of these communities to accept higher-density development. The survey found little enthusiasm for greenfields NCD projects. Its view is that the financial subsidies and regulatory inducements that maintain sprawl disadvantage NCD projects that challenge conventional preferences and standards. This means higher perceived risk for NCD greenfields locations. Nevertheless, a number of innovative developers with high-quality projects have succeeded, sometimes in spite of traditional regulations and sometimes because of ones that support NCD.

High Priority for NCD: Urban Infill

In the 1950s, America's cities experienced urban flight. Current census data demonstrate a changing trend: 36 cities that experienced losses in the 1970s saw population growth in the 1990s.[97] Many downtowns saw population increases from 1990 to 2000, including Houston (69 percent), Seattle (67.4 percent), Chicago (51.4 percent), and Denver (51.4 percent), which shows the strong public demand for higher-density, mixed-use places.[98] Urban growth makes the gentrification issue more acute, however.

A first priority of NCD is urban infill. It saves undeveloped land, has the best potential for high-density and full mixed uses, and can promote similar projects in the area. Also, cities offer an existing population base to improve retail success in the short term. Developed before sprawl became the norm, cities' roads, sidewalks, and other infrastructure were created to handle mixed uses and foster walking. Furthermore, public transit may already exist; if not, it may be more viable in the short term because of the existing population base. Some features may already exist around the NCD site, such as offices and schools. The NCD project may be more like a new neighborhood than a full, new community, because of its modest land area. Even relatively small parcels of land can be successfully converted into NCD projects. This reduces the problem of land aggregation.

An excellent example of a transit oriented infill project is a $140 million development planned above and near the Silver Spring Metro station in Maryland. It will include offices, retail shops, and residential units. The developer said, "This is a prototypical 'smart growth' project. It's putting density where transit services are available. It's bringing together uses that are complementary to one another."[99]

New Cities Initiative – Providence, Rhode Island

An ambitious urban renewal plan for Providence was unveiled in June 2000. More than 500 acres of industrial property adjoining the Providence waterfront and Interstate 95 will be developed. The "New Cities" are Narragansett Landing, Westminster Crossing and the Promenade. Each mixed use project includes construction of office, residential, retail and open spaces with considerable attention to walkability.

It is estimated that the Promenade and Narragansett Landing will provide employment for 10,000 and 16,000 people respectively, with an additional 1,000,000 square feet of commercial properties located in Westminster Crossing. The Promenade will provide 630 residential units that will be linked to Capitol Center by way of pedestrian bridges over Route 95. Residences in Narragansett Landing will be accessible from Route 95, from an extensive waterfront greenway and by the river. Narragansett Landing will offer housing for 6,500 people.

Accessibility, by foot, car and boat, and creation of green space are major features of the plans. The centerpiece of Westminster Crossing will be the creation of a deck over Route 95 that will be covered with a seven-acre park. The park will reunite a community that was bisected by the highway, and will provide walking access to the 350,000 square feet of commercial space that will occupy a section of the deck. The Promenade plan includes a number of raised pedestrian crossings that will allow visitors to travel by foot from the planned hotels to shopping and entertainment facilities. Nearly half of Narragansett Landing will be set aside for greenways and parks. This area includes a 20-acre greenway that connects the waterfront to Roger Williams Park to the south. This original design of the city included this linkage as part of a string of connected green spaces. The New Cities Project seeks to fulfill this element of the initial plan.

High Priority for NCD: Redevelop Older Suburbs and Rural Towns

Like urban infill, redevelopment of existing suburbs is land-efficient. So-called "dead malls" or grayfields offer sites for NCD projects. They are often centrally located in older suburbs, and surrounding residential neighborhoods may be approaching densities that can support public transportation. Retail has a similar benefit, because it can rely on people living nearby to establish its viability early in the development process. Much of the infrastructure network within suburbs will serve infill NCD projects, including schools, roads, sewer and water connections, for example. Infrastructure found in suburbs often requires adjustments, however, such as ensuring a connected street network that offers many ways into the NCD area and facilitates pedestrian access to shopping and other amenities. Old parking lots can serve an integral role in this metamorphosis, using the vast acreage of open, paved areas to construct mixed-use communities, including town centers. Parking should be accommodated by elevated structures. Though more expensive to build, elevated parking structures free up important space for other uses. New approaches to parking can also reduce land use. Parking lifts, such as in Berkeley, California, are being used to reduce parking space requirements by a factor of three. Zipcar, pioneered at MIT, is a car-sharing program with multiple owners, permanent parking spots, and by-the-hour usage.

Developed areas along transportation corridors in suburban areas also fit here. These roads often are highly used, but feature limited commercial strip-mall kinds of development. Many of the areas alongside major roads can be converted into discrete, mixed-use communities or villages following NCD principles.

Most community opposition to suburban infill projects has been directed against conventional housing projects, rarely with exceptional design, rather than NCD development. NCD projects must work closely with communities to build support for mixed-use projects, which are generally absent from suburban areas, and also address concerns about density and traffic. The density issue makes design and community involvement very important. The traffic concern makes it important to emphasize true mixed-use, particularly jobs and shopping opportunities that reduce vehicle use. Fear of loss of property values must be addressed by high-quality design and information on how other NCD projects over time have increased land and home values within and around them.

Smaller rural towns also fit into this application, because so many of them have long passed their glory days as agricultural or mill towns. Yet they still have important infrastructure and often crave economic development. In contrast to conventional sprawl subdivisions, NCD projects, by definition, help preserve the rural character of the town and its surrounding areas. A key component would be employment opportunities, so that the new project is not merely a bedroom community for people commuting to jobs in a nearby metropolitan area.

Rural Character Versus Rural Sprawl

Small rural towns have almost always had surrounding farms and ranches as the key basis for small-scale retail and commercial establishments and as the tax base for limited public services. Extensive growth in recent times, however, has motivated developers to build sprawl-type subdivisions on former working lands. Such rural developments are usually designed for people who commute to jobs in a metropolitan area, with commutes of an hour or more, each way, with lower housing costs the key attraction. By consuming working lands and adding a very large influx of new residents to a small rural town area, once authentic rural areas turn into "rural sprawl" locations. Attempts by local governments to maintain the rural character of places have generally failed. The most common legal tactic is to require relatively large land areas per dwelling, typically from five acres to 25 acres. It does not work. Developers merely design subdivisions for expensive homes on large lots, often in the $500,000- to $1-million range, or even more. People who move to such "rural" developments say that they are attracted to the rural lifestyle and environmental amenities. But such places no longer have authentic rural character. And new homeowners often complain about remaining farm activities, such as those that cause odors, and want rural unpaved roads upgraded. Taxes for the original rural residents often increase because of the high cost of supplying new infrastructure and public services for new developments, often causing "rural gentrification" when the original residents seek more affordable locations. NCD offers a major alternative to rural sprawl development.

Lower Priority for NCD: Greenfields Development

To say that NCD greenfields development is a lower priority is not to discount the continuing need for greenfields development. Future housing needs will absolutely require greenfields development, regardless of how much development is steered to areas with existing infrastructure. From a state perspective, greenfields development often has wider impacts, on watersheds that affect large areas, for example. NCDs offer less environmental impact. A significant proportion of NCD projects to date have been greenfields developments, in part because land outside developed areas is generally less expensive, local officials may want

development, and there is less scrutiny from nearby residents. However, opposition from rural residents can be significant, because they fear a loss of the rural character that made the location attractive to them. A complicating factor arises when a greenfields site is within some type of designated growth area. Interestingly, in Portland, Oregon, which is famous for its early use of an urban growth boundary, some 75 percent of new development has been on greenfields sites *within* the boundary. Greenfields NCDs, however, use land more efficiently than sprawl, better protect local environmental amenities, and should employ the same principles as NCDs in cities and older suburbs. But spatial location makes it more difficult to meet some NCD criteria, especially in the near-term.

Vermillion, in Huntersville, North Carolina, and Civano, near Tucson, Arizona, are examples of NCD greenfields projects that fulfill most, but not all, of the NGA fundamental goals.[100] For example, Civano offers only single-family detached homes, and Vermillion has only single-family attached and detached homes, although multifamily dwellings are planned. Civano is particularly interesting because, besides being a mixed-use community offering its residents cafes, art galleries, public plazas, and parks within walking distance of the homes, there is also an environmental technologies business center with a photovoltaic-manufacturing facility.

Employment centers are very important, especially when traffic congestion is a local issue and because greenfields sites do not have the luxury of an existing, adjacent population to expedite the viability of retail. At successful projects, home sales can be rapid, which makes it easier to get stores and restaurants opened. For example, at the Plum Creek NCD development in Kyle, Texas, homes have sold 50 percent faster than projected.[101] The project meets the key NGA criteria, including a mixed-use town center, a transit station, diverse housing, pocket parks, industry and office development, two schools, and a public golf course.

2. Include Mixed Land Uses

***NCD Criteria**: Mixed-use projects must include housing; significant employment opportunities from office space or light industrial facilities; retail shopping; and outdoor recreation and public spaces. Larger projects should also include schools and entertainment facilities.*

Viable Retail and Entertainment

NCD communities have retail districts within the neighborhood, allowing easy access for people who live nearby. Retail is one of the most difficult factors to incorporate in NCDs. Businesses come and go as market preferences vary, and they must be careful to locate in places where a significant customer base can be found. In existing urban and suburban areas, retail stores can take advantage of the nearby population. Retail may require more time to take hold in greenfields NCDs, unless the number of residents and workers is high. The population of the community may need to reach a critical mass to maintain viable retail.

Some factors can expedite the viability of retail, such as locating the stores on the edge of the NCD, allowing outside populations to easily access the retail area from main transportation corridors. But conventional strip malls undermine true NCD. Another way is to encourage a popular store to anchor the retail street, which will bring people to the area even if it is out of the way. Retail areas should have stores on both sides of the street. Parallel street parking should be allowed, which helps calm traffic and encourages customers to drive by all stores on the block. Effective retail streets have wide sidewalks, inviting people to stroll through the area and have a seat on the sidewalk patio.

Mizner Park in Boca Raton, Florida

Redeveloped on the site of a failed shopping mall, Mizner Park includes 272 apartments and townhouses, 103,000 square feet of office space, and 156,000 square feet of retail. Mizner Park's tenants include many of the original lessees who opened shop in early 1991.[102] In addition to shopping, the project has become a community destination for dining and leisure. The retail zone is anchored by entertainment facilities and restaurants, rather than by large department stores. Most parking is accommodated in four multistory parking garages, placed at each corner of the site. Cars parked along the street serve as a buffer between traffic and pedestrians. The project has a density five times higher than the rest of the city and a mix of large and small retailers, restaurants, and entertainment venues.

Office and Light Industrial Space

Including office space in new communities is critical for providing jobs for local residents, ensuring use of retail establishments, and creating a vibrant community. One problem with sprawl is its inactivity during the day; housing subdivisions are often deserted during work hours, because people are away at their jobs and children are at school or day care. Similarly, most downtown business areas and suburban office parks are lifeless when the workday ends, because people return to their housing subdivisions. Integrating jobs into communities can thus help create 24-hour neighborhoods where workers can support retail and restaurants during the day and residents can support businesses at night and on weekends.

Outdoor Recreation and Public Places

NCD intersperses parks and other green spaces, as well as civic areas, throughout the mixed-use community, although a central community square with civic buildings is an important feature of the best NCD projects. The goal is to have important civic places and parks within an easy walking distance of each neighborhood. One NCD in South Carolina illustrates this design. Located 10 minutes from Charleston, I'On includes housing units, commercial space, public spaces, a wildlife preserve for migratory birds and other wildlife, parks throughout the development, marsh front paths, wetlands, and two lakes. [103] The South Carolina Department of Natural Resources recently awarded I'On a stewardship award for its site plan. I'On includes a mix of lot sizes and housing types, as well as commercial buildings and a grid of connecting streets. The Mt. Pleasant Town Council vetoed the plan in 1995. It then took the developer and the South Carolina Coastal Conservation League fourteen months of strenuous work to turn this decision around. The Conservation League rallied dozens of citizens for a series of public meetings and guided the developer through tricky negotiations with the town. I'On gives South Carolina its best example to date of development that is both environmentally sound and financially successful.

Neighborhood Schools

Successful neighborhoods require high-quality schools. A consumer survey found that 78 percent of people want a community where kids can walk to a smaller neighborhood school, compared to 19 percent who favor driving kids to a larger regional school.[104] State strategies can target education funds in developed areas to encourage infill. Like housing subdivisions, schools have moved out to suburbs and generally increased in size. The newer a school, the less likely it is that children can walk to school. A study in South Carolina found that students are four times more likely to walk to schools built before 1983 than to those built more recently.

Hazards such as busy streets are forcing more children who live within walking distance to board a bus instead. The same study found that students are more than three times likely to get such "hazard busing" if they attend a school built after 1971.[105]

In June 2000, the National Trust for Historic Preservation added historic neighborhood schools to its annual list of America's Eleven Most Endangered Historic Places for a number of reasons.[106] In particular, the National Trust found that building new schools was favored over renovating older ones. A related concern was "mega-school sprawl," or the construction of massive schools in isolated places, requiring use of cars and large land areas for parking lots. In response to these concerns, there is a growing interest in creating smaller, community-centered schools and renovating older schools. NCD supports rehabilitating old schools near NCD infill projects, or building new schools in new neighborhoods that students can walk or bicycle to.

3. Create a Range of Housing Opportunities and Choices

***NCD Criteria**: Residential housing should be mixed-income and offer a range of single-family and multiple-household units, with special attention to affordable housing needs of the community.*

Diverse, Mixed-Income Housing

Mixed-use communities include housing for a variety of income levels, including affordable housing for low- and modest-income people. Apartment buildings, condominiums, townhouses, and single-family homes provide a spectrum of housing types for different needs and income levels. This integration of different housing types fosters economic and social diversity, and it allows people to remain in the community as their needs change. In today's world, housing is needed for diverse situations, including singles, retirees, and an aging population. The concept of "aging in place" is gaining attention, which means that communities with a range of housing that allows people to remain in the community as their housing needs change are growing in importance. This also means provision for assisted living places. Another social change is that more people are working in their homes. Live-work units, which can be useful for small business, telecommuters, and others seeking to work at home, are another housing option gaining popularity. The convergence of living and working is especially consistent with NCD, because more time is spent at home locations with increased opportunities to use all the amenities of the community.

The Montgomery County, Maryland, Affordable Housing Success Story

In 1973 the County Council passed the Moderately Priced Dwelling Unit (MPDU) Ordinance, which has several key features and accomplishments.[107]

- Projects of 50 or more units must include MPDUs.
- A minimum of 12.5 percent of the units must be MPDU, or 15 percent if the developer wants a 22-percent density bonus over what existing zoning allows.
- This ordinance has accounted for 10,000 low- and moderate-income units out of a total of 35,000 units produced in the county.
- The average MPDU price is about $90,000, less than half the market rate for a new townhouse and perhaps a quarter of the market rate for a new detached home.
- The average income of the MPDU homebuyer is $29,000.
- Over 95 percent of MPDU residents relocate from other areas of the county.

- MPDU units are spread throughout developments and are not concentrated in any particular areas of the county.
- Builders make a profit or break even on MPDUs.
- Demand for MPDUs typically exceeds the supply, which is handled through a waiting list or lottery.

This approach could be used for NCD projects just about anywhere.

4. Preserve Open Space, Farmland, Natural Beauty, and Critical Environmental Areas

***NCD Criteria**: Direct Land Use: The location of the project should not unnecessarily consume working lands, including farms, ranches and private forestland, or unique environmental areas. The project should not contribute to fragmentation of green spaces, and it should protect the watershed. Compact design should minimize the amount of land consumed on a per capita and per dwelling basis, and interior community green spaces should be designed for multiple uses, such as parks, sports fields, walking, biking, greenways, and water sports. The location should not increase the risk or negative impacts of natural disasters.*

Direct Land Use

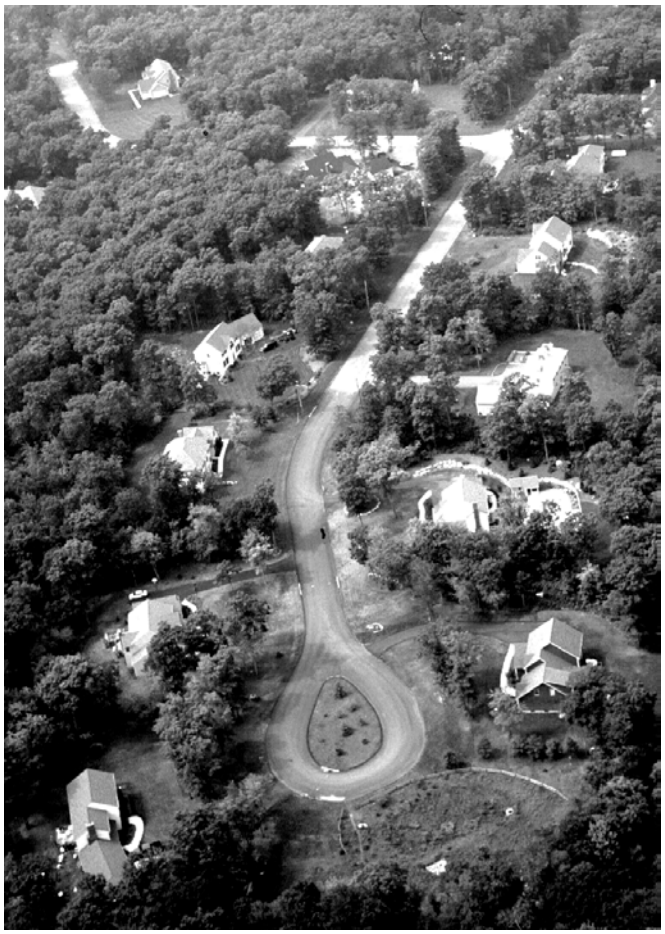
Developers have learned that natural beauty sells. NCD projects, wherever they are located, maximize green spaces. The more trees, the better, even in urban areas. NCDs save state and local resources in two ways. When they are on urban and suburban infill sites, thereby reusing land in developed areas, NCDs help protect environmental amenities in undeveloped areas. NCD designs are compact, minimizing the footprint of development on the landscape, even for greenfields projects. For example, lot sizes are smaller, streets are narrower, setbacks are less, and there are fewer parking spaces in the commercial areas. Multifamily dwellings also reduce land use. Compact design reduces the amount of land needed for streets and utilities per dwelling unit. For the Vermillion NCD development in North Carolina, the paved area per dwelling was 634 square feet, compared to 2,018 square feet for a conventional project designed, engineered, and permitted (but not built) for the same site.[108] By focusing development away from farmland and other open spaces, or using much less of them, other state, local, and private programs can permanently protect important lands through easements, restoration agreements, and other approaches.

Watershed Protection

A rapidly emerging framework for protecting key water resources is to focus on watersheds that can be regional in nature, rather than political jurisdictions and smaller areas. Watershed management is a means for truly integrating efforts to achieve a balance of ecological, economic, and social goals.[109] Improved land use through NCD can be consistent with watershed protection at its best. Reducing runoff from development is a key aspect of good watershed management and an important aspect of what is being called Low Impact Development (LID).[110] LID is a site design strategy fully consistent with NCD that attempts to maintain or replicate the pre-development hydrologic regime through the use of design techniques to create a functionally equivalent hydrologic landscape. Techniques include use of integrated and distributed micro-scale storm water retention and detention areas, reduction of impervious surfaces, the lengthening of flow paths and runoff time, and preserving site features such as

riparian buffers, wetlands, steep slopes, mature trees, flood plains, woodlands and highly permeable soils.

Figure A-1. Forest fragmentation caused by low-density sprawl development within a green space; also increased potential for harm from wildfires. (From *South County Design Manual*, Rhode Island Department of Environmental Management.)



Natural Hazards Versus Natural Disasters

Natural hazards turn into disasters only when the man-made or built environment intersects with the extreme events of nature. Preventing disasters means not putting human activity in the path of strong forces of nature. But in the past several decades much of the national growth and development have taken place in areas prone to natural hazards. For example, development along the Atlantic and Gulf coasts has been remarkable. "In 1998, more than 50,000 housing units were built on barrier islands from Maine to Texas, double the construction rate of 1992."[111] Coastal developers say business is the best they have seen in 30 years.

A North Carolina study[112] noted: "Human activity is routinely located so that it creates a serious threat to ourselves as well as to a wide variety of natural resources and functions, many of which are beneficial to people as well as valuable in and of themselves as part of an

interrelated living ecosystem." This explains why the costs of natural disasters have been increasing at a remarkable rate.

To the extent that public policy uses tax dollars to pay for the costs of avoidable natural disasters, payments that restore and maintain poorly located developments subsidize them. The Federal Emergency Management Agency has noted:

> "Land development patterns over the past several decades have emphasized sprawling suburban communities and homes constructed with little or no attention paid to protection against high winds, flooding, wildfire, or other natural hazards…We allow some people to build in environmentally sensitive areas susceptible to natural hazards, and then we pay to help them recover when disaster strikes. This is not sound environmental or fiscal policy."[113]

The built environment that results from development is not nearly as resilient or recuperative as the natural environment. Moreover, development inevitably exacerbates the impacts on nature and people from periodic hazardous events, and in some cases actually precipitates a disaster. *From the perspective of protecting public health and safety, smart land use means avoiding locating new development in places clearly vulnerable to strong natural events.* This is in contrast to attempts to use engineering controls, such as levees for controlling floods or jetties to control beach erosion, which too often merely relocate adverse impacts.

Conventional greenfield development poses specific problems that NCD can reduce or eliminate. NCD, for example, reduces surface runoff, compared to conventional development with large amounts of impervious surfaces that can contribute to local flooding. Similarly, greenfield NCD can reduce the risk and impacts of wildfires, because of compact layout in contrast to more isolated large home sites embedded throughout green spaces. NCD, by definition, would not be located in areas where the very construction could cause disasters, such as development on steep hillsides that can cause mudslides, or development that requires removing or leveling dunes in coastal areas that exacerbates impacts from hurricanes.

The tools that local government uses to manage land use are not necessarily used effectively to prevent development that inevitably produces new or larger natural disasters. NCD provides an important opportunity to focus on prevention and mitigation of natural disasters. Just as NCD would not be consistent with destroying a forested area for a development, by definition NCD locations should not increase the risk or negative impacts of natural disasters.

NCD Criteria: *Indirect Land Use: The project's impact on use of land for infrastructure, such as roads and utilities, as well as offsite energy production, for example, is relevant. Energy-efficient design and "green" construction approaches, such as use of recycled materials for construction, that are viewed in terms of sustainable design are consistent with "smart growth."*

Indirect Land Use

Less resource-intensive communities require less land for offsite activities, such as energy generation and water supplies. Energy and water are as important throughout the country as ever. Even states with comparatively abundant water resources are facing periodic shortages. Many states, counties, and communities are addressing this reality head on, relying on designs that efficiently use energy and water. One example is Civano, a NCD near Tucson, Arizona.[114] One goal is to use 50 percent of the energy of comparable homes. Using established solar energy technologies, building orientation, and efficient building materials, Civano saves energy

and water. Mesquite and palo verde trees line the pedestrian-friendly streets, and designs incorporate solar heating. Desert plants are used in both public and private spaces to conserve water and fit in with the Sonoran desert landscape.

Some states have policies and programs that seek to minimize indirect land use. Pennsylvania, for example, was the first state to officially declare integrated design, energy efficiency, and sustainable technology as foundations for future building programs.[115] The Green Government Council, under Governor Tom Ridge, has sponsored the Commonwealth of Pennsylvania's Guidelines for Creating High-Performance Green Buildings, one step toward the Commonwealth's goal of decreasing emissions through pollution prevention and energy efficiency. This initiative will use the tenets of sustainable design and development to align the interests of business with stewardship of the natural environment.

5. Provide a Variety of Transportation Choices

***NCD Criteria**: Transit-friendly design prefers locations with easy access to mass transit and, for larger projects, includes local public transit. Community layout should facilitate walking and biking over automobile use for non-commuter trips. Automobile traffic should be facilitated by connected street patterns providing multiple routes. Telecommuting should be encouraged through broad-band connections for dwellings.*

Integrate Transportation into Land-Use Planning

Land development creates a demand for transportation, and new transportation capacity often generates new development. This has been particularly true for sprawl development. NCD, together with integrating transportation into land-use planning, helps break that cycle.

State Initiatives

North Carolina's Traditional Neighborhood Development Guidelines assist local governments in choosing NCD; the state's Department of Transportation's Division of Highways released these guidelines in August 2000.[116] Oregon's Transportation and Growth Management Program provides grants to local governments to prepare integrated plans that promote NCD.[117] Wisconsin provides grants to local governments for developing comprehensive plans, with priority given to promotion of NCD.[118]

Public Transit

In a recent national survey, nearly 50 percent of respondents indicated that improving public transportation was the best way to reduce traffic.[119] In the Atlanta region, known for its sprawl, traffic congestion, and propensity for road building, a recent survey found that 61 percent thought that the long-term solution for traffic congestion was expanding mass transit and creating communities that allow for shorter trips, compared to just 22 percent supporting new road building.[120] For public transportation to be competitive with cars, it must be high quality; accessible; and competitive in cost, time, convenience, and flexibility. Weyrich and Lind found in a 1999 study of public transportation that over half of Americans have public transit available, but less than one-third believe it is satisfactory.[121] Thus, public transportation is generally not competitive for a significant number of people. The study also found that many people choose transit over their cars in the highest-quality systems. For example, more than one third of the San Diego Trolley riders choose the trolley over automobiles. Over 60 percent of the St. Louis MetroLink light rail system's riders formerly drove to work. In Portland, Oregon, 75 percent of

riders said they could drive but choose transit. For the past several years, use of public transit nationwide has increased significantly, up 21 percent since 1995, and is now at the highest level in 40 years.[122] This has been explained in several ways, including improved transit systems, growing displeasure with traffic congestion, and increasing urban population.

Public transit is more likely to be a high-quality option in urban and older suburban NCDs because the population base needed to support the system is available. While NCDs on the outskirts of developed areas have some transportation options, such as walking and biking, built in, it is probably infeasible to connect transit to these developments. Over time, as a greenfields NCD matures and grows in population, it may become possible to link the neighborhood with public transit. But it is worth noting that an NCD neighborhood is more likely than sprawl places where people do not know each other as well to support van- and car-pool arrangements. For large NCD projects, internal transit, such as buses or trams, may be feasible.

Regional Approaches to Transportation

Transportation and land use are fundamentally interrelated. Easy access to highways promotes sprawl development. Easy access to public transit promotes NCD. Local governments need to partner closely with regional and state transportation agencies to help guide growth. Transportation policy that is not closely coordinated with local governments is likely to result in haphazard growth.

Georgia's Regional Transportation Authority

In the 1990s, the population of the Atlanta area increased about 13 percent, but the amount of developed land increased by 50 percent.[123] Dramatic growth stressed transportation infrastructure and increased air emissions. The problem culminated in 1997, when federal funds for highways were cut off in the 13-county metropolitan area because the region failed to meet Clean Air Act standards. This spurred the creation of the Georgia Regional Transportation Authority (GRTA) in 1998, which was a centerpiece of Governor Roy E. Barnes' first legislative session. GRTA can help local governments finance mass transit and other projects that alleviate air pollution. GRTA board approval is required for major highway projects and developments in the region. Although local governments can override a GRTA veto with a three-fourths majority, governments choosing not to cooperate may lose state and federal funds.

An Integrated Network of Local Streets—More Roads, Not Fewer

Counter-intuitively, more streets are typically found in NCDs than in similarly sized sprawl developments. As stated by the Congress for the New Urbanism: "we need more roads, not fewer roads. The traditional town grid is based on a fine network of small streets and roads. If you take a bird's eye view of Portland and its suburbs you might be surprised to find many more acres of land devoted to streets in the city than in the suburbs. The suburban problem is actually too few small streets and too many big roads."[124] Drivers in older cities and towns have lots of streets to choose from, not just a few big ones.

Sprawl relies on collector and arterial roads to funnel cars in and out of housing subdivisions. Traffic congestion results because no other options exist. Contrarily, NCDs discard the collector road altogether. Instead, the neighborhood includes a connected network of local streets that provide a number of access points to homes, retail, and other mixed uses. Streets may follow a standard grid form, but many NCDs today are varying the network layout, still careful to ensure they are interconnected, providing multiple points of access. Cul-de-sacs are discouraged, because they fragment the area and reduce street connectivity.

It must be emphasized that NCD design experts have a variety of options to ensure that streets are safe for pedestrians, children, and cars. Most people would be surprised to learn that research has shown that narrow local streets are safer than wider ones.

The Crossings in Mountain View, California

Intensifying land use around transit facilities, providing much-needed housing in a very tight Silicon Valley market, has revitalized Mountain View's downtown.[125] The city has replaced zoning and building requirements with guidelines that facilitate NCD and transit-oriented development. This innovation helped create The Crossings, an 18-acre, transit-oriented, mixed-use project adjacent to a CalTrain commuter rail station. Initiated in 1991 and completed in 1998, The Crossings transformed a 1960s strip mall into a walkable community. The community provides a range of housing and retail opportunities, with single-family homes, townhouses, and apartments all located within a short walk of shopping and transit. Community parks and open spaces are distributed throughout the site.

Telework

Another way to lessen the burden of traffic congestion is by encouraging telework. NCD projects are placing increasing emphasis on live-work units and broad-band connections to homes. By working from home or a nearby center, teleworkers avoid roads during rush hour. Teleworkers in the United States have increased by 2.8 million in the last year, according to the International Telework Association and Council.[126] The highest proportions were found in the New England, Mountain, and Pacific states. The study found a "positive environmental effect of telework: a reduction of the number of cars on the road, with a concomitant reduction in air pollution." An earlier study by the same group found that teleworkers save 52.9 minutes each workday by working at home.[127] Reducing commuting also provides cost savings. An impetus for telework may come in the form of a network of local telework centers. Starbucks has already begun experimenting with a casual telework center they're presenting as the alternative workplace.

6. Foster Walkable, Close-Knit Neighborhoods

***NCD Criteria**: Pedestrian-friendly design employs mixed uses, locations of key amenities, and streets with sidewalks to promote safe walking for residents and workers. Through streets are preferred over cul-de-sacs.*

Walking for Diverse Households

Envision Utah said: "Today's diversity of households includes young single people, childless couples, parents with children, empty-nesters and retirees. Mixing these housing types in a well-designed, walkable community allows people to continue to live in the same community as their housing needs change, rather than forcing them to move away to find appropriate housing. Walkable communities also provide greater autonomy for children, seniors, low-income persons and others who may lack ready access to cars. Children can walk to school or to friends' houses, and seniors can walk to buy groceries, go to the bank and do other errands."[128]

Design for Pedestrians

A 1995 survey of recent homebuyers and shoppers in California, Colorado, Florida, Michigan, Texas, and Washington found that 75 percent wanted communities with the option to walk or bike to shops.[129] Data show that Americans walk and bicycle to work less than people in other developed countries.[130] But is this because Americans simply do not like walking and biking, or is it because these modes of transportation are not available, given American development patterns? The 1995 survey suggests the latter.

A 1999 survey of San Antonio residents found that 85.9 percent would walk to work if they could, and 84.8 percent thought it is important for future planning to provide as many walking opportunities as possible to work, school, recreation, and transit.[131] Of course, promoting walking usually is associated with promoting biking. The same survey found that 94 percent of the people supported bicycle paths, lanes, and racks throughout the community, particularly connecting schools, parks, neighborhood centers, and the downtown (or town center for NCDs).

NCDs are built at the scale of pedestrians. Places built to support automobile dependence tend to be unsafe for pedestrians. Walking has become more dangerous that car travel with 49.9 deaths per 100 million miles traveled as compared to 1.4 for car travel. NCD neighborhoods include a connected network of local streets that provide a number of access points to homes, retail, and other mixed uses. Cul-de-sacs are discouraged because they fragment the neighborhood, isolating homes from other activities. Recognizing that people will walk only so far for an errand, NCDs keep parks, retail, and other mixed uses within a 5-minute to 20-minute walk from homes. Sidewalks, shade trees, and good street lighting are always priorities for NCD to support safety and walking pleasure. Road widths are narrow, calming traffic speed and providing a safe environment for pedestrians. Front porches also promote safe, walkable neighborhoods. Figure A-2, on the next page, illustrates how good design can promote walkable places.

Figure A-2. (top view) In a typical suburban strip mall, the streets are wide, encouraging cars to travel at high speeds. Sidewalks end abruptly or lack pedestrian amenities such as trees. Pedestrians have no safe place to cross the street, and few close destinations. (bottom view) A computer-enhanced image shows how curbs, crosswalks, trees and more compact mixed-use development can make this same area more attractive and walkable. (Photos provided by Calthorpe Associates and Urban Advantage)

Walking and Health

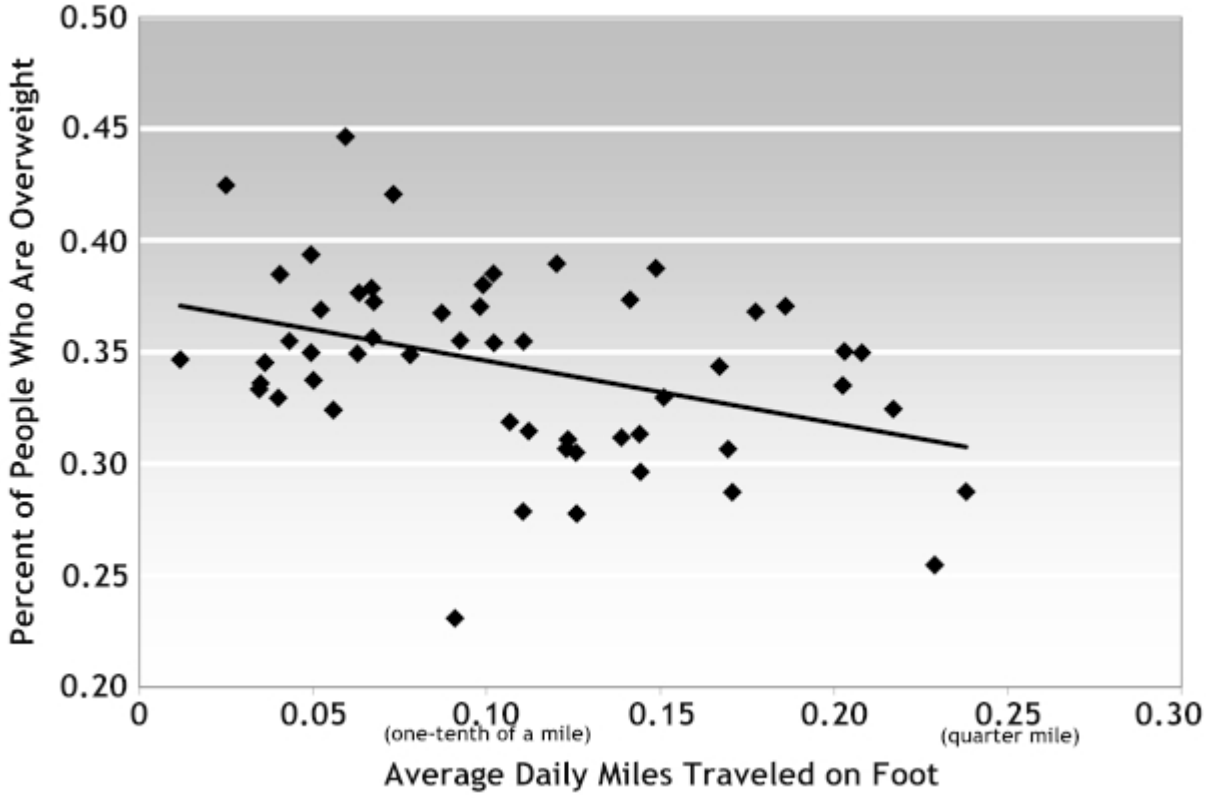
Walkable communities promote better health. Conventional development and transportation often neglect pedestrians and bicyclists; destinations of interest are distant and poorly connected, making safe and convenient walking and bicycling difficult. In the United States, nearly 25 percent of all trips are less than one mile, so it is reasonable to expect that many trips could be made on foot or bicycle, but more than 75 percent of these trips are made by automobile.[132] Data from the Nationwide Personal Transportation Survey revealed that in 1995, 89 percent of all trips were made by automobile, while only 6.4 percent were made on foot or by bicycle.

Physical inactivity is thought to be a primary factor in more than 200,000 deaths per year in the United States, a total equivalent to 25 percent of all chronic disease deaths and 10 percent of all deaths. Because 29 percent of adults are sedentary and more than 50 percent are overweight, becoming active can provide a meaningful health benefit. One strategy is to promote the integration of walking and bicycling into daily routines, substituting these activities for some driving. An editorial made this point: "Public health and city planning share common goals and similar histories. Both disciplines seek to improve living conditions and health by preventing, identifying, investigating, and eliminating problems that may pose threats to residents' health and welfare."[133]

Americans are walking much less than they used to. The number of trips people take on foot has dropped by 42 percent in the last 20 years. The Nationwide Personal Transportation Survey, conducted by the U.S. Department of Transportation, documents the decline in the amount Americans walk. Walking dropped from 9.3 percent of all trips in 1977 to just 5.4 percent in 1995. In comparing health research to transportation data, the Surface Transportation Policy Project found that metro areas where people walk less tend to be places where more people are overweight, as shown in Figure A-3 below.[134] Places where people walk further each day tend to have fewer people who are at risk of health problems due to obesity. This relationship remained even when the data were controlled for age, race, and income. This simple comparison suggests that where you live, and whether you can walk in your neighborhood, may be related to your likelihood of suffering from obesity or the other dangers associated with a sedentary lifestyle.

> "More recently, the nation's public health sector has focused attention on the impact of an inactive lifestyle on public health and the importance of a transportation system that encourages physical activity by making it easier for people to walk and bicycle as part of their daily lives. The concept of quality communities clearly should incorporate a transportation network that is safe and comfortable for pedestrians and bicyclists of all ages. …One of the hallmarks of the livable community is that residents become less dependent upon the automobile through street layout and land use patterns it allows. Experts have reported that alternative transportation means, such as walkways and bicycle paths, are perceived to afford a higher quality of life in urban and adjacent areas."
>
> *State and Local Governments Partnering for a Better New York*, Report of the Quality Communities Interagency Task Force, January 2001.

Figure A-3. Relationship between obesity and amount of walking. (from Surface Transportation Policy Project, "Mean Streets 2000.")



7. Take Advantage of Existing Community Assets

***NCD Criteria**: New projects should benefit from surrounding community features, such as transit facilities, green spaces for recreation, schools, shopping, and cultural amenities. Local abandoned and brownfields sites should be seen as opportunities for land recycling.*

Take Advantage of Existing Transit

Public transit facilities are a great community asset. Transit-oriented NCD focuses development close to existing transit stations or stops. In 1992, San Diego launched its famous "Transit-Oriented Development Design Guidelines," which support development near transit locations, and the California Transit Village Act authorized regional planning agencies to provide grants and loans to local governments, with priority for NCD projects.[135] New Jersey's Transit Village Initiative provides low-interest loans for NCD projects and has supported five different communities along new commuter rail and bus lines.[136] Maryland has a Transit-Oriented Development Incentive Program that provides grants and facilitates public-private partnerships for NCD projects.[137]

Use Older Neighborhoods

The Cotton District NCD in Starkville, Mississippi,[138] occupies several blocks near Mississippi State University. The developer's approach has preserved the Cotton District's traditional character, building upon the assets available and architectural history, including brick streets and courtyards. Dan Camp, an instructor at Mississippi State University, has worked for 30 years to rehabilitate more than 130 rental properties in the Cotton District. Shanties and row houses were changed into attractive, viable rental and owner-occupied housing for a mix of incomes, races, and household compositions. This shows the potential for carrying out gradual, incremental revitalizations that build upon existing assets.

Reuse Brownfields Sites

Brownfields are often located in downtown sites with tremendous development potential. A number of states are cleaning up brownfields and converting them to mixed-use communities. Of 240 reused sites examined in a recent study, 45.4 percent were mixed-use projects, compared to 22.1 percent for industrial uses, 7.5 percent for offices, 6.7 percent for cultural and recreational uses, 5.8 percent for retail, and 4.6 percent for residential.[139] Of the 109 mixed-use projects, 67 included office space, 60 included retail, 54 included cultural and recreational uses, 49 included residences, 45 included some type of public space, and 37 included some type of industrial use.

The River's Edge Project, Traverse City, Michigan

This mixed-use, urban infill project is on about eight acres at the downtown site of a former foundry that had been vacant for nearly two decades. River's Edge illustrates the key role state government can play. First, county and city agencies received funding from Michigan's Coastal Management Program to conduct environmental and market assessments. A 1995 state law that granted liability protection for parties not responsible for site contamination encouraged private purchase of the site. The developer conducted a baseline environmental assessment that satisfied state requirements. A $1.6-million reclamation grant from the state covered all remedial activities. The developer also benefited from the state's 10-percent tax credit for demolition and construction expenses.[140]

The plan calls for a mixed-use community with street-level retail shops, second-floor office space, and high-rise residential units. Much of the parking is hidden below buildings to promote space for strolling and other outdoor activities. Residents can walk, bike, or ride public transportation to work, shopping, dining, entertainment, and beaches. The site will ultimately be built out to more than 300,000 square feet with a value of nearly $100 million. The developer has been praised for its community outreach, which included meetings with neighborhood groups and regular communication with relevant stakeholders.

Use Vacant Lands and Abandoned Buildings

Infill sites are available throughout the country, signaling a significant potential for redevelopment. In the suburbs there are dead malls and aging strip centers that offer remarkable grayfield opportunities. In Orange County, California a study found that the projected population increase of 600,000 in the next 20 years could be accommodated by converting a few hundred of the 700 old strip malls into mixed use communities.[141]

A report from the Brookings Institution found that, on average, 15 percent of city land is vacant.[142] Southern cities tend to have the most vacant land, while northeastern cities tend to

have the least (19 percent and 10 percent, respectively). Conversely, cities with a low proportion of vacant land tend to have high numbers of abandoned structures; the northeast, for example, exhibited 7.5 abandoned structures per 1,000 inhabitants, the highest regional number in the country. Nineteen cities experienced population growth of at least 50 percent from 1980 to 1995. Predominantly found in the south and west, these 19 cities reported nearly four times more vacant land than cities that lost population during the period. Use of all this vacant land for NCD projects, with their higher densities, would save several times as much land area needed by greenfields sprawl subdivisions.

Percentage of Vacant Land in Cities, by Region, 1998

Census Region	*Average Population*	*Average Area (Acres)*	*Average Vacant Land (Acres)*	*Average Percentage of Vacant Land*
South	326,167	103,869	20,011	19.3
West	274,183	47,232	10,349	14.8
Midwest	240,798	59,433	5,904	12.2
Northeast	1,345,612	55,122	5,004	9.6

8. Promote Distinctive, Attractive Communities with a Strong Sense of Place, Including the Rehabilitation and Use of Historic Buildings

***NCD Criteria**: Whenever historic and older buildings, particularly schools, are present at the site, their rehabilitation and reuse should be part of the new design. Architectural criteria and community layout, including location of public buildings and spaces, should be used to encourage interactions among residents, facilitate safe street life, and maximize a strong sense of local community in harmony with the natural setting.*

Real Neighborhoods

Sprawl places provide privacy. Many people want that and are happy with conventional designs of suburban communities. NCD offers more traditional neighborhoods that are part of what many other people believe to be more "livable" and "healthy" communities. With the best NCD designs, residents also get privacy. The word "neighborhood" is often used casually. But a place may not really be a neighborhood, where people interact, know each other, and care about each other's well-being. A strong sense of place and a real neighborhood signify that people are strongly connected to their surroundings, not solely to their homes and their own property. Many people are looking for not just homes and places. They want something that fits their values and preferred lifestyle. They want community.

An authentic neighborhood provides an emotional or even spiritual connection to the local natural environment, the community's built environment, the historical and cultural roots of the place, and neighbors. By design, NCDs offer many types of community gathering places to stimulate interactions among residents, including safe streets with sidewalks that people actually use for walking, nearby green spaces providing recreational opportunities, public spaces, civic buildings, and local retail shops. Front porches are also important. A consumer survey found that 71 percent of people favored a community where they would know their neighbors better and have a sense of community, compared to 30 percent who favored a community where they did not know their neighbors as well but had a greater level of privacy.[143]

The Neighborhood Miracle

"The neighborhood is the key, because it is the lowest common denominator of community planning everywhere, whether in a rural context (where the neighborhood becomes a hamlet or village), or in the city, where the neighborhood can be just a few streets out of a city of millions. …Like a living cell, a neighborhood needs an edge to hold it together, a membrane of some kind to keep the rest of the world at bay while allowing some things to enter. And just as a cell has a nucleus to organize activities and focus energy, a neighborhood needs a vital center, the nature of which can vary widely. It can be a group of buildings, a town square, a market plaza, etc. Along with these two basic ideas, the center and the edge, neighborhoods often share other organizing principles, which can revolve around a function, such as Main Street Commercial or Educational Campus, or a natural feature, such as a river valley or hilltop."

P. Flinker, *South County Design Manual* (Providence, R.I.: Rhode Island Department of Environmental Management, May 2001).

Distinctive Communities

One concern about much of the current interest in things such as New Urbanism is that it might lead to a new form of suburban sprawl, where the places have certain features of NCD but become look-alike places. The key to NCD is that the design of the community is uniquely connected to the specific geographic location, with its own special historical roots, cultural linkages, and environmental amenities. Developing a sense of place must mean that designers, planners, and architects do not use a cookie-cutter approach but work with the special characteristics of a location to develop a truly distinctive community.

Rehabilitating Buildings

Many older and historic buildings throughout the United States were constructed to comply with an earlier code. The buildings are often structurally sound. Sometimes these buildings are being used, but often they are not. A source of housing and office space in many urban areas remains untapped, in part because rehabilitation projects are required to bring buildings into compliance with building codes for new construction. For new buildings, complying with the construction code is a straightforward process. Materials to be used, processes to be followed, and safety standards to be met are clearly stated, and the cost of compliance is predictable. However, using new-building codes to renovate old buildings is cumbersome and costly, and often infeasible technically. This encourages developers to raze old buildings or build in a different location. In other words, the playing field is not level; it is biased in favor of new construction. A second problem is predictability. Building owners often have no idea what will be required until plans are reviewed. "Smart" rehabilitation codes, adopted by New Jersey and Maryland and which Rhode Island is planning, seek to lower costs and add predictability to the process, encouraging reinvestment and higher-value use of older buildings, especially former schools that may be closed or are being used for other purposes.[144]

Land-use taxation is another approach to promoting rehabilitation of older buildings. Pittsburgh leads the country in having a land-based property tax, rather than a building-based one, in areas targeted for revitalization. If a tax is based on the value of the buildings, owners have a

disincentive to improve their buildings, add value, and pay more taxes. If the tax is based on the value of the land, however, building owners are motivated to improve their buildings or to sell them to someone who will.

9. Encourage Citizen and Stakeholder Participation in Development Decisions

***NCD Criteria**: The process used to locate a new project, develop the best design, and gain public acceptance for it should include opportunities for active participation by all local stakeholders, with particular sensitivity to any possible displacement of existing residents and businesses at or near the location.*

Using NCD to revitalize cities, retool older suburbs, or create a greenfields town requires an open, public process. NCD fits well with the growing acceptance of community-based planning and design. Mixed-use principles are often resisted initially, until stakeholders understand design choices. Engaging citizens and making them integral in decisionmaking can help achieve buy-in, which is essential for success. One size does not fit all. There is no short cut for learning the preferences of an individual community and tailoring an NCD that fits.

Charrettes are used to facilitate the design and public involvement processes. The term defines "a rigorous and inclusive planning process undertaken by an interdisciplinary design team over a brief time period."[145] The Visual Preference Survey approach has yielded impressive results nationwide. Both charrettes and visual survey methods require citizen and stakeholder participation. At the outset, it is critical to identify all stakeholders, including developers, local public officials, and interested segments of the public. Of particular importance is any person or group likely to oppose the project at some point in the future. By engaging these people early, developers, public officials, and the public can build trust. They must address many parts of development concurrently, including planning, architecture, engineering, financing, and environmental compliance. This avoids delays that can dramatically increase costs for developers. Working in short feedback loops is also important; by taking public input, turning it around in short order, and presenting it while the initial meetings remain fresh in people's minds, stakeholders increase the likelihood of project success. Working with specific details is crucial. Only by directly addressing tough issues, such as density, building types, and traffic, will a charrette or other processes prove successful.

Envision Utah

Envision Utah is an exemplary example of a participatory process for addressing growth and quality-of-life issues.[146] Formed in January 1997, Envision Utah is a public-private community partnership that first studied the effects of long-term growth in the Greater Wasatch Area of northern Utah. The partnership includes state and local government officials, business leaders, developers, conservationists, landowners, academicians, church groups, and other citizens. A series of public workshops collected opinions and data from citizens on how to shape future development. These workshops included extensive work on regional maps and explored important topics such as land use, transportation, and the preservation of open space. They culminated in 1999, with the *Quality Growth Strategy,* which seeks to preserve Utah's high quality of life, natural environment, and economic vitality. The strategy identifies six primary goals: enhancing air quality; increasing mobility and transportation choices; preserving critical lands; conserving and maintaining water resources; providing housing opportunities for a range of

family and income types; and maximizing efficiency in public infrastructure investments. The second phase implements the *Quality Growth Strategy* through many approaches and tools and an ongoing public process.

10. Make Development Decisions Predictable, Fair, and Cost-Effective

***NCD Criteria**: Local governments with zoning code responsibilities should facilitate innovative community designs consistent with "smart growth" principles, and they should not impose obstacles and delays that place such designs at a competitive disadvantage to more common "sprawl" and single-use projects, particularly on greenfields sites. Developers should present realistic plans for construction of different phases over time and assurances that build-out and future development will be consistent with the original vision accepted by the community.*

Today the scale is tipped toward sprawl development projects. This happened after the 1950s, when developers, planners, and government officials shifted from the mixed-use to the single-use paradigm for development. That changed everything. Nevertheless, today innovative designers and developers are creating successful NCDs, but this often requires significantly greater effort than conventional projects. One common tool used to permit NCDs is the planned unit development (PUD). However, PUDs are cumbersome processes, and designers and developers have little guarantee that the effort will pay off, because PUDs require an exception or variance from what is legally allowed.

According to the Rocky Mountain Land Use Institute: "developers perceive the PUD rezoning process as highly politicized, ad hoc, unpredictable, costly, and time-consuming. Given this perception of the PUD approval process, there should be little surprise in the fact that even in communities that encourage [NCD] development through this type of PUD rezoning, such as Mt. Pleasant, South Carolina, and Gainesville, Florida, few projects have been initiated and conventional suburban development still dominates the landscape."[147] In summary, developers stay away from NCD because it is harder to accomplish and there are more uncertainties about financial success unless zoning codes have been modernized, improved, and made fairer to support NCD.

NCD deserves a fair and timely permitting process. Time is critical for developers. Time *is* money. As an example, a project in San Diego underwent three years of delay and had to reduce the number of housing units from 150 to 51, increasing the starting price of the condos by $30,000—up from $120,000 to about $150,000.[148] Any factors that significantly prolong development processes cripple projects. Government, developers, and the public can help change this dynamic, but it takes an explicit commitment to support NCD. The marketplace has been distorted by government policies and regulations that support sprawl over NCD. Three things are needed.

- First, government can adopt a set of parallel codes that designers and developers can use to complete NCD projects. Rather than going through the PUD processes and obtaining a number of variances, developers would have the option of using the NCD code.
- Second, government can also help expedite regulatory review of NCDs, because they are preferred over conventional projects.
- Third, government agencies and developers must facilitate open processes, listening to the locals and building public trust, through community based planning and design.

Longer-term Uncertainties

Regardless of initial regulatory approvals for a project, all government systems provide many opportunities for departing from an original approved plan. A key issue is that many larger NCD projects require years, often as many as 20 years, to fully implement. Adherence to the original design is sometimes uncertain. While housing is done early, other important mixed uses, such as office buildings, civic buildings, and retail, may not be constructed due to various changed circumstances. Maintaining the commitment to NCD principles requires an ongoing public-private partnership and residents that remain fully engaged.

A major cause of uncertainties is whether the costs of public services and infrastructure will be made available when needed to meet the needs of the planned build-out. With developers and builders rarely paying all such costs, local jurisdictions may encounter a range of problems in providing all that is needed, including resistance by taxpayers for school bond issues, for example. This is why impact fees paid by developers or builders are becoming increasingly important, although they may not cover all costs.

Endnotes

[1] Peter Calthorpe, *The Next American Metropolis* (Princeton, N. J.: Princeton Architectural Press, 1993).
[2] Patrick A. Simmons and Robert E. Lang, *The Urban Turnaround: A Decade-by-Decade Report Card on Postwar Population Change in Older Industrial Cities*(Washington, D.C.: Fannie Mae Foundation, 2000). http://www.fanniemaefoundation.org/news/UrbanTurnaround.pdf.
[3] Joel S. Hirschhorn, *Growing Pains: Quality of Life in the New Economy* (Washington, D.C.: National Governors Association, 2000). http://www.nga.org/cda/files/GROWINGPAINS.pdf.
[4] Bureau of Transportation Statistics, *Transportation Statistics Annual Report 1999* (Washington, D.C.: Department of Transportation, 1999). http://www.bts.gov/transtu/tsar/tsar1999/index.html.
[5] Texas Transportation Institute, *1999 Urban Mobility Study* (College Station, Tex.: Texas Transportation Institute, 1999).
[6] Department of Housing and Urban Development, *The State of the Cities 1999* (Washington, D.C.: Department of Housing and Urban Development, 1999).
[7] Leon Kolankiewica and Roy Beck, *Weighing Sprawl Factors In U.S. Cities* (Arlington, Va.: NumbersUSA.com, 2001).
[8] W. Fulton et al, *Who Sprawls Most? How Growth Patterns Differ Across the U.S.* (Washington, D.C.: The Brookings Institution, July 2001).
[9] National Wildlife Federation, "Paving Paradise: Sprawl's Impact on Wildlife and Wild Places in California" (San Diego: National Wildlife Federation, 2001). http://www.nwf.org/smartgrowth/pavingparadise.html.
[10] Fish and Wildlife Service, *Report to Congress on the Status and Trends of Wetlands in the Conterminous United States 1986 to 1997* (Washington, D.C.: Department of the Interior, 2000). http://wetlands.fws.gov/bha/SandT/SandTReport.html.
[11] Environmental Protection Agency, *Latest Findings on National Air Quality: 1999 Status and Trends* (Research Triangle Park, N.C.: Environmental Protection Agency, 2000). http://www.epa.gov/oar/aqtrnd99/brochure/brochure.pdf.
[12] Phillip Longman, "Sprawl" (St. Petersburg, Fla.: Florida Trend, December 1994).
[13] http://www.columbiapolicy.org/fiveyear.html.
[14] http://www.sustainable.doe.gov/toolkit/TCDDM/HOME2.htm.
[15] New Urban News, *New Urbanism: Comprehensive Report and Best Practices Guide* (Ithaca, N.Y.: New Urban News, 2001).
[16] http://www.envisionutah.org/planning_tools/toolbook.html.
[17] Business First, "Park DuValle Evolves" (Louisville, Ky.: Business First, 2000). http://louisville.bcentral.com/louisville/stories/2001/02/12/story7.html.
[18] Struever Brothers, Eccles and Rouse, *Digital Harbor* (Baltimore, Md.: Struever Brothers, Eccles and Rouse, 2000). http://www.sber.com/digitalHarbor/digital_harbor.asp.
[19] Northeast-Midwest Institute, *Strategies for Successful Infill Development* (Washington, D.C.: Northeast-Midwest Institute, 2001). http://www.nemw.org/infillbook.htm.
[20] Struever Brothers, Eccles and Rouse, Digital Harbor—A Showcase for Smart Growth (Baltimore, Md.: Struever Brothers, Eccles and Rouse, 2000). http://www.sbercom/digitalHarbor/showcase.asp.
[21] New Jersey Office of State Planning, *Employment and Community: Reintegrating the Work Place into Mixed-Use Centers* (Trenton, N.J.: New Jersey Office of State Planning, 2000).
[22] http://www.fhlbboston.com/compete/ahda/gallery/crawford.html; and http://www.nhi.org/online/issues/116/Deitrick%20and%20Ellis.html.
[23] National Governors Association, *New Mission for Brownfields: Attacking Sprawl by Revitalizing Older Communities* (Washington, D.C.: National Governors Association, 2000). http://www.nga.org/chairman/1,1169,,00.html.
[24] Partners for Livable Communities, *The Livable City: Revitalizing Urban Communities* (Washington, D.C.: Partners for Livable Communities, 2000).
[25] R. B. Sohmer and R. E. Lang, "Downtown Rebound" (Washington, D.C.: Fannie Mae Foundation, 2001).
[26] Thomas Brink, "Density by Design: How to Do Density Well—Addison Circle" (paper presented at CNU 2000: The Politics of Place, 2000). http://www.cnu.org/pdf/Brinck.pdf.

[27] "Building Main Street U.S.A.," *The Washington Post*, September 25, 2000.
[28] For more information on Eastgate Mall, see: http://www.doverkohl.com/redevelop.html.
[29] Global Strategic Real Estate Research Group, *Greyfield Regional Mall Study* (Washington, D.C.: PricewaterhouseCoopers, 2001). http://www.cnu.org/cnu_reports/Greyfield_Feb_01.pdf.
[30] For more information on Abacoa, see: http://www.abacoa.com/.
[31] Keith Alan Deutsch, *New Urbanism: Abacoa Revisited, Mizner Park Reviewed* (Mercerville, N.J.: E.S.P., August1999). http://www.specialtyretail.net/issues/august99/newurbanism.htm.
[32] For more information on Orenco Station, see: http://www.orencostation.com/.
[33] American LIVES, "Community Preferences: What the Buyers Really Want in Design, Features and Amenities" (Oakland, Calif.: American LIVES, 1999).
[34] "American Gridlock," *USA Today*, May 28, 2001.
[35] http://www.sierraclub.org/sprawl/community/mortgages.asp.
[36] Richard Florida, "Competing in the Age of Talent: Quality of Place and the New Economy" (Pittsburgh, Pa.: Mellon Foundation, Heinz Endowments, and Sustainable Pittsburgh, 2000). http://www.heinz.cmu.edu/~florida/.
[37] http://www.ntba.net.
[38] New Urban News, *New Urbanism: Comprehensive Report and Best Practices Guide* (Ithaca, N.Y.: New Urban News, 2001).
[39] Ibid.
[40] R.W. Burchell, "Costs and Benefits of Alternative Development Patterns: Sprawl Versus Smart Growth," in *Metropolitan Development Patterns: Annual Roundtable 2000* (Cambridge, Mass: Lincoln Institute of Land Policy, 2000).
[41] http://www.envisionutah.org/planning_tools/toolbook.html.
[42] National Governors Association, *In the Fast Lane: Delivering More Transportation Choices to Break Gridlock* (Washington, D.C.: National Governors Association, 2000). http://www.nga.org/cda/files/001129TRANSREPORT.pdf.
[43] Victoria Transport Policy Institute, *Land Use Impacts on Transport: How Land Use Patterns Affect Travel Behavior* (Victoria, British Columbia: Victoria Transport Policy Institute, 2001). http://www.vtpi.org/tdm/tdm20.htm.
[44] John W. Holtzclaw, *Explaining Urban Density and Transit Impacts on Auto Use* (Washington, D.C.: Sierra Club and Natural Resources Defense Council, 1991).
[45] John W. Holtzclaw, "Smart Growth—As Seen from the Air: Convenient Neighborhood, Skip the Car," (presented at the Air and Waste Management Association's 93rd Annual Meeting and Exhibition, June 23, 2000, Salt Lake City, Utah).
[46] For more information, see SMARTRAQ at: http://www.smartraq.net/smartraqbrochure2.pdf.
[47] Joel S. Hirschhorn, *Growing Pains: Quality of Life in the New Economy* (Washington, D.C.: National Governors Association, 2000). http://www.nga.org/cda/files/GROWINGPAINS.pdf.
[48] P. Flinker, *South County Design Manual* (Providence, R.I.: Rhode Island Department of Environmental Management, May 2001).
[49] National Association of Realtors, *Survey—On Common Ground: Realtors and Smart Growth* (Washington, D.C.: National Association of Realtors, 2001).
[50] http://www.viainfo.net/2025/surveyresults/.
[51] New Urban News, *Consistent Market Found for NU* (Ithaca, N.Y.: New Urban News, 2001).
[52] M.J. Eppli and C.C. Tu, *Valuing The New Urbanism: The Impact of the New Urbanism on Prices of Single Family Homes* (Washington, D.C.: Urban Land Institute, 1999).
[53] A.D. Duany et al., *Suburban Nation* (New York: North Point Press, 2000).
[54] New Urban News, *New Urbanism: Comprehensive Report and Best Practices Guide* (Ithaca, N.Y.: New Urban News, 2001).
[55] New Urban News, "A Banner Year for NU Home Sales" (Ithaca, N.Y.: New Urban News, 2001). http://www.newurbannews.com/whatsnew.html.
[56] Zimmerman/Volk Associates, Inc., *Sales Price Escalation: Lot Sales by Developer, Seaside, Walton County, Florida, 1982 to 1996* (Clinton, N.J.: Zimmerman/Volk Associates, Inc., 2001).
[57] John Rymer, "Commentary: Here to Stay," *Builder*, June 2001.

[58] American LIVES, *Community Preferences: What the Buyers Really Want in Design, Features and Amenities* (Oakland, Calif.: American LIVES, 1999).
[59] For more information about NCD codes, see: http://www.preservenet.com/PoliticsIndex.html
[60] New Urban News, *New Urbanism: Comprehensive Report and Best Practices Guide* (Ithaca, N.Y.: New Urban News, 2001).
[61] For more information on Wisconsin's draft code, see: http://www.doa.state.wi.us/olis/pdf_files/tnd_model_ordinance_feb13_2001.pdf.
[62] For more information about state NCD codes, see: http://www.envisionutah.org/; http://www.mnplan.state.mn.us/SDI/ordinancestoc.html; http://www.op.state.md.us/planning/m&gnew.html; and http://www.state.nj.us/osp/
[63] J.S. Shaw and R.D. Utt, *A Guide to Smart Growth* (Washington, D.C.: The Heritage Foundation, 2000).
[64] New Urban News, *New Urbanism: Comprehensive Report and Best Practices Guide* (Ithaca, N.Y.: New Urban News, 2001).
[65] City of Austin, Texas, *Traditional Neighborhood District Criteria Manual* (Austin, Tex.: City of Austin, 1997).
[66] For more information on Austin's Smart Growth initiative, see: http://www.ci.austin.tx.us/smartgrowth/.
[67] City of Albuquerque, *Downtown 2010 Sector Development Plan* (Albuquerque, N.M.: City of Albuquerque, 2000). http://www.cabq.gov/planning/pages/longrange/dat.html.
[68] For more information on Utah's Model Codes, see: http://www.envisionutah.org/.
[69] http://www.envisionutah.org/planning_tools/toolbook.html.
[70] For more information on New Jersey's Building Rehabilitation Code, see: http://www.state.nj.us/dca/codes/rehab/pressrel.htm; and http://www.state.nj.us/dca/codes/rehab/.
[71] Joseph E. Gyourko and Witold Rybczynski, "Financing New Urbanism Projects: Obstacles and Solutions," *Housing Policy Debate* 11, no. 3 (2000).
[72] Christopher B. Leinberger, *Financing Progressive Development* (Washington, D.C.: Capital Xchange, The Brookings Institution, 2001). http://www.brook.edu/es/urban/capitalxchange.htm.
[73] Joseph E. Gyourko and Witold Rybczynski, "Financing New Urbanism Projects: Obstacles and Solutions," *Housing Policy Debate* 11, no. 3 (2000).
[74] Ibid.
[75] Ibid.
[76] Christopher B. Leinberger, *Financing Progressive Development* (Washington, D.C.: Capital Xchange, The Brookings Institution, 2001). http://www.brook.edu/es/urban/capitalxchange.htm.
[77] Ibid.
[78] V. Dover, "Retrofitting Suburbia," http://www.doverkohl.com/umaryland.html.
[79] For more information on Oregon's Livability Awards, see: http://www.livable.org/awards.html
[80] For more information on Wisconsin's draft code, see: http://www.doa.state.wi.us/olis/pdf_files/tnd_model_ordinance_feb13_2001.pdf.
[81] P. Flinker, *South County Design Manual* (Providence, R.I.: Rhode Island Department of Environmental Management, May 2001).
[82] For more information on Maryland Smart Codes, see: http://www.dhcd.state.md.us/smartcodes/model.htm.
[83] "In the War On Sprawl, MD. Aims At Zoning," *The Washington Post*, May 30, 2001.
[84] J.K. Brueckner, "Property Taxation and Urban Sprawl," Lincoln Institute Conference on Property Taxation and Local Government Finance, January, 2000. http://www.igpa.uillinois.edu/publications/pdf/taxsprawl.pdf.
[85] C.J. Mayer and C.T. Somerville, "Land Use Regulation and New Construction," August 1999. http://pacific.commerce.ubc.ca/somerville/Research/supply-regulation.pdf.
[86] http://www.columbiapolicy.org/fiveyear.html
[87] Ibid.
[88] http://www.state.de.us/governor/speeches/2001/livable_de_remarks.htm.
[89] http://www.treasurer.ca.gov/news/speeches/ideastoaction.htm.
[90] http://www.treasurer.ca.gov/news/speeches/092100metroeconstrategy.pdf.
[91] http://www.treasurer.ca.gov/news/speeches/ideastoaction.htm.

[92] For more information on the Minneapolis-St. Paul opportunity sites, see: http://www.metrocouncil.org/sgtc/sites.htm.
[93] New Jersey Office of State Planning, *Employment and Community: Reintegrating the Work Place Into Mixed-Use Centers* (Trenton, N.J.: New Jersey Office of State Planning, 2000).
[94] Joel S. Hirschhorn, *Growing Pains: Quality of Life in the New Economy* (Washington, D.C.: National Governors Association, 2000). http://www.nga.org/cda/files/GROWINGPAINS.pdf.
[95] The Smart Growth Network's 10 Principles of Smart Growth can be found at: http://www.smartgrowth.org/.
[96] Joseph E. Gyourko and Witold Rybczynski, "Financing New Urbanism Projects: Obstacles and Solutions," *Housing Policy Debate* 11, no. 3 (2000).
[97] Patrick A. Simmons and Robert E. Lang, *The Urban Turnaround: A Decade-by-Decade Report Card on Postwar Population Change in Older Industrial Cities* (Washington, D.C.: Fannie Mae Foundation, 2000). http://www.fanniemaefoundation.org/news/UrbanTurnaround.pdf.
[98] R.B. Sohmer and R.E. Lang, *Downtown Rebound* (Washington, D.C.: Fannie Mae Foundation, 2001).
[99] D. Hedgpeth, "Development Planned Near Silver Spring Metro," *The Washington Post*, June 21, 2001.
[100] For more information on Vermillion and Civano, see: http://www.ionvillage.com/; http://www.vermillion-tnd.com/; and http://www.civano.com/.
[101] New Urban News, *New Urbanism: Comprehensive Report and Best Practices Guide* (Ithaca, N.Y.: New Urban News, 2001).
[102] Mid-America Regional Council, *Creating Quality Places* (Kansas City, Mo.: Mid-America Regional Council, 2000). http://www.qualityplaces.marc.org/0_home.htm.
[103] For more information on I'On, see: http://www.ionvillage.com/.
[104] American LIVES, *Community Preferences: What the Buyers Really Want in Design, Features and Amenities* (Oakland, Calif.: American LIVES, 1999).
[105] South Carolina Coastal Conservation League, "Wait for the Bus: How Lowcountry School Site Selection and Design Deter Walking to School," Charleston, S.C., 1999.
[106] Constance E. Beaumont and Elizabeth G. Pianca, *Historic Neighborhood Schools in the Age of Sprawl: Why Johnny Can't Walk to School* (Washington, D.C.: National Trust for Historic Preservation, 2000).
[107] K.W. Moritz, "Is Growth Management Compatible with Housing Affordability? Lessons from Montgomery County, Maryland," *Land Development*, Fall 2000.
[108] New Urban News, *New Urbanism: Comprehensive Report and Best Practices Guide* (Ithaca, N.Y.: New Urban News, 2001).
[109] National Research Council, *New Strategies for America's Watersheds* (Washington, D.C.: National Academy Press, 1999).
[110] U.S. Environmental Protection Agency, *Low Impact Development (LID) – A Literature Review* (Washington, D.C.: U.S. Enviromental Protection Agency, 2000). http://www.epa.gov/owow/nps/lid.pdf.
[111] O. Ullman et al, "Growth reshapes coasts," *USA Today*, July 20, 2000.
[112] A.K. Schwab et al, "Sustainable Development and Natural Hazards Mitigation." http://www.dem.dcc.state.nc.us/mitigation/Library/Sust_Dev.pdf.
[113] Federal Emergency Management Agency, "Planning for a Sustainable Future." (Washington, D.C.: Federal Emergency Management Agency, 2000).
[114] For more information on Civano, see: http://www.civano.com.
[115] For more information on Pennsylvania's and other states' green buildings approach, see: http://www.worldbuild.com/ggbactivities.htm#pennsyl.
[116] http://www.doh.dot.state.nc.us/guidelines/.
[117] http://www.lcd.state.or.us/tgm/.
[118] http://www.doa.state.wi.us/olis/.
[119] Belden, Russonello, and Stewart, *National Survey on Growth and Land Development* (Washington, D.C.: Smart Growth America, 2000).
[120] J. McCosh, "Poll: Growth Raised Quality of Metro Life," *The Atlanta Journal-Constitution*, February 16, 2001.
[121] Paul M. Weyrich and William S. Lind, *Does Transit Work? A Conservative Reappraisal* (Washington, D.C.: Free Congress Foundation, 1999).
[122] "American Gridlock," *USA Today*, May 28, 2001.

[123] Georgia Regional Transportation Authority, "GRTA Background and History," http://www.state.ga.us/demo/GRTA/purpose.html.
[124] Congress for the New Urbanism, *Task Force Update* (San Francisco, Calif.: Congress for the New Urbanism, 2000).
[125] For more information on The Crossings, see: http://www.abag.ca.gov/planning/theoryia/compmtnview.htm; and http://www.calthorpe.com/.
[126] International Telework Association and Council, *Telework America 2000* (Washington, D.C.: International Telework Association and Council, 2000). http://www.telecommute.org/twa2000/research_results_key.shtml.
[127] International Telework Association and Council, *Telework America 1999* (Washington, D.C.: International Telework Association and Council, 1999). http://www.telecommute.org/twa/1999_research_results.shtml.
[128] http://www.envisionutah.org/planning_tools/toolbook.html.
[129] American LIVES, *Community Preferences: What the Buyers Really Want in Design, Features and Amenities* (Oakland, Calif.: American LIVES, 1999).
[130] National Governors Association, *In the Fast Lane: Delivering More Transportation Choices to Break Gridlock* (Washington, D.C.: National Governors Association, 2000). http://www.nga.org/cda/files/001129TRANSREPORT.pdf.
[131] http://www.viainfo.net/2025/surveyresults/.
[132] Richard E. Killingsworth and Thomas L. Schmid, "Community Design and Transportation Policies: New Ways to Promote Physical Activity." *The Physician and Sports Medicine* 29, no. 2 (2001). http://www.physsportsmed.com/issues/2001/02_01/killingsworth.htm.
[133] Ibid.
[134] Surface Transportation Policy Project, "Mean Streets 2000," http://www.transact.org/Reports/ms2000/two.htm.
[135] http://www.humplan.com/rapiweb/Simon%20Ginn.htm.
[136] http://www.state.nj.us/cda/hmfa/commdev/travillage.htm.
[137] http://mdot.state.md.us/.
[138] For more information on the Cotton District, see: http://www.mississippitalking.msstate.edu/issue-04/cotton/.
[139] ECS, *The ECS Landreuse Report* (Exton, Pa.: ECS, 2000).
[140] National Governors Association, *New Mission for Brownfields: Attacking Sprawl by Revitalizing Older Communities* (Washington, D.C.: National Governors Association, 2000). http://www.nga.org/chairman/1,1169,,00.html.
[141] E. Harper, "Turning Old Strip Malls Into Housing," *Los Angeles Times*, June 17, 2001.
[142] The Brookings Institution, *Vacant Land in Cities: An Urban Resource* (Washington, D.C.: The Brookings Institution, 2001). http://www.brook.edu/es/urban/pagano/paganofinal.pdf.
[143] American LIVES, *Community Preferences: What the Buyers Really Want in Design, Features and Amenities* (Oakland, Calif.: American LIVES, 1999).
[144] For more information on New Jersey and Maryland Rehabilitation Codes, see: http://www.state.nj.us/dca/codes/rehab/; and http://www.dhcd.state.md.us/smartcodes/rehab.htm.
[145] New Urban News, *New Urbanism: Comprehensive Report and Best Practices Guide* (Ithaca, N.Y.: New Urban News, 2001).
[146] For more information on Envision Utah, see: http://www.envisionutah.org/.
[147] Northeast-Midwest Institute, *Strategies for Successful Infill Development* (Washington, D.C.: Northeast-Midwest Institute, 2001); New Urban News, *New Urbanism: Comprehensive Report and Best Practices Guide* (Ithaca, N.Y.: New Urban News, 2001).
[148] "Residents Rally to Prevent Sprawl," *Los Angeles Times*, May 21, 2001.